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COMMERCIAL CAR JOURNAL
THE MAGAZINE FOR FLEET OPERATORS

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Season's Best
from REO

REO MOTORS, INC., LANSING 20, MICH.

NEW MODELS...NEW VALUES !

See the new line of DODGE "Job-Rated" Trucks

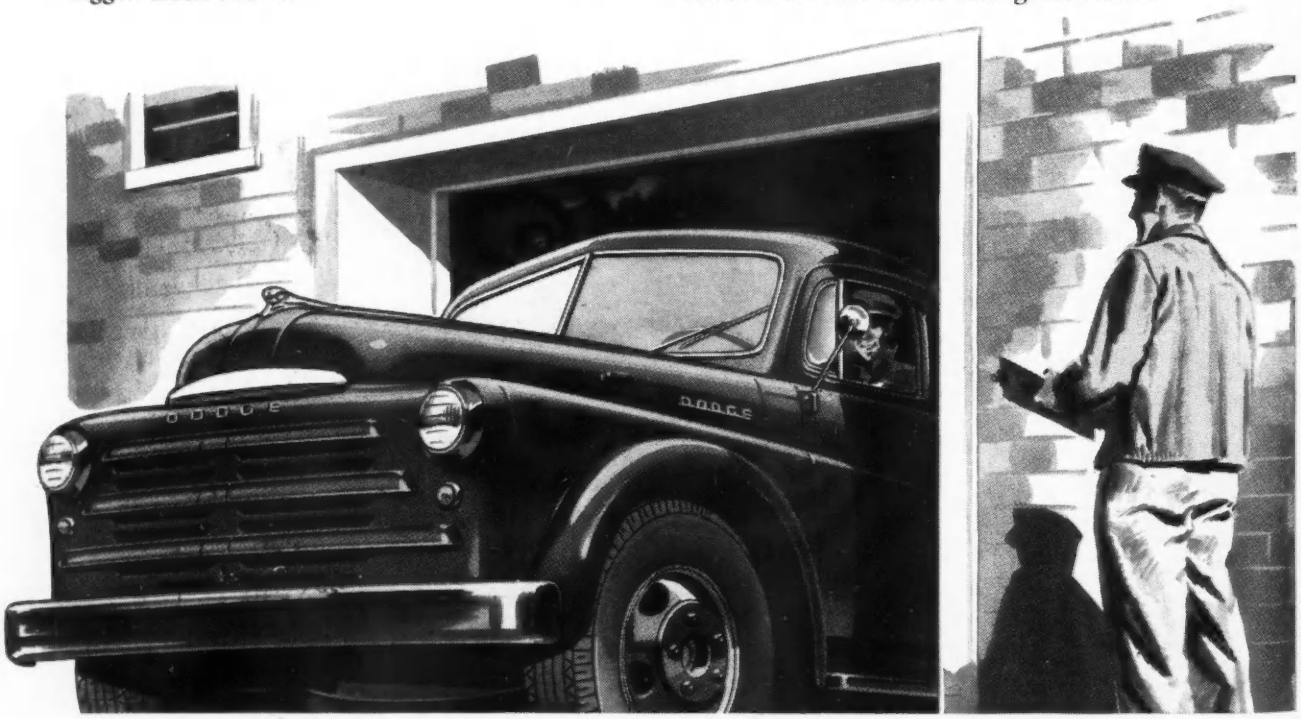
Compare Dodge low prices with competition

Be sure to see the new line of Dodge *"Job-Rated"* trucks.

Check the many new features and advantages of these new trucks . . . See *why* they are today's *biggest* truck values.

These new Dodge *"Job-Rated"* trucks are priced with the lowest. But remember! It's what you *get* for what you *pay* that counts.

Listed below are just a few of the features that make these new trucks such great values.



1. **New Synchro-Shift** 3-, 4- or 5-speed transmissions—*"Job-Rated"* for the load. Smooth, silent, easy to shift. Get behind the wheel . . . feel the difference.

2. **New Steering Column Gearshift** on ½-, ¾-, and 1-ton models. Gives you real handling ease. Safe, fast, flexible operation.

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4. **Top Performance with Economy:** Each truck is powered with a *"Job-Rated"* truck engine. Your power matches your load. Compare Dodge with competition on this important point.

5. **Cyclebonded Brake Linings** (no rivets): Brake linings last longer. No scored brake drums.

6. **New Splash- and Dust-proof Electrical Systems:** All parts and connections positively protected. Extra high output generators and coil; resistor-type spark plugs. Amazingly smooth operation—even at low engine speed.

7. **"Pilot-House" Cabs:** Rear-quarter windows and big 890 sq. in. windshield give safe all-'round vision. Vent wings provide controlled ventilation. You ride in deep-cushioned comfort on a big 57¼-inch seat.

* * * *

See your Dodge dealer *now.* Let him show *ALL* the new Dodge advantages . . . and why Dodge *"Job-Rated"* trucks will give you lowest *operating* costs.

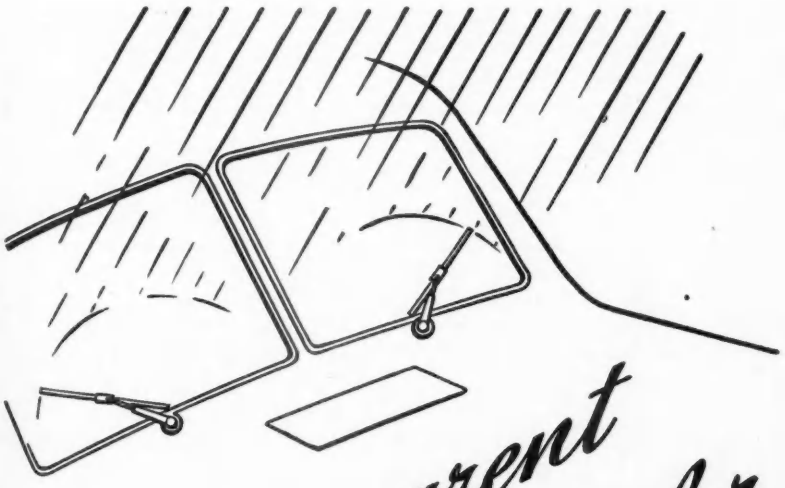
He'll give you a good deal on any one of more than 350 Dodge chassis and body models.

Low down payments. Low monthly payments. Liberal allowance for your used truck.

For the good of your business...

Switch to DODGE "Job-Rated" TRUCKS

SEAL OUT THE WEATHER



Transparent Windshield Sealer

Makes windshields leak-proof to rain or snow. Always is crystal clear, colorless and pliable.

PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

COMMERCIAL CAR J

Vol. LXXVIII Philadelphia, December, 1949 No. 4

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CCJ Reader Digest

Safety Lane Saves $30,000 per Year

This article proves that a safety lane not only is good for fleet safety but boosts tire and engine life, cuts road failures and extends major overhaul periods by 30 per cent. Not only does this maintenance feature pay for itself but actually saves this fleet $30,000 a year in cold cash. See Page 65.

Bus Parts "a la Carte"

Mechanics of Southern Pennsylvania Bus Co. don't park at the parts window, waiting for parts. Each shop foreman is provided with a parts list and an order pad. He writes his order, a floorman picks it up and delivers the parts right on the job. There's no waiting, no lost time, no errors. This and other features of this fleet's new parts room system have stepped up efficiency and production. See Page 66.

Driver Cooperation is Key to Safety

General Petroleum's fleet is engaged principally in city delivery service—a tough safety problem. Yet, four drivers have built up a flawless safety record for over 14 years. Most others have excellent record. The key to this successful record is cooperation resulting from a six-point educational program that has built up a fine "esprit de corps." See Page 78.

Spotlight on Safety Supervisors

To what extent should the safety director be considered responsible for slack driving practices and road accidents chargeable to his company? Safety Congress meeting pulls no punches. Are your men measuring up? See page 69.

JOURNAL

with which is combined Operation & Maintenance

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5-W Oil Improves Sub-Zero Operation

A leading engineer reports on laboratory work with 5-W oil. Tests show that viscosity stability is comparable to 10-W. Consumption rate shows only a moderate increase over that of 10-W—if engine temperature is not increased substantially. Cranking speed is increased, and wear rate is satisfactory. Page 73.

Diesel Cold Starting

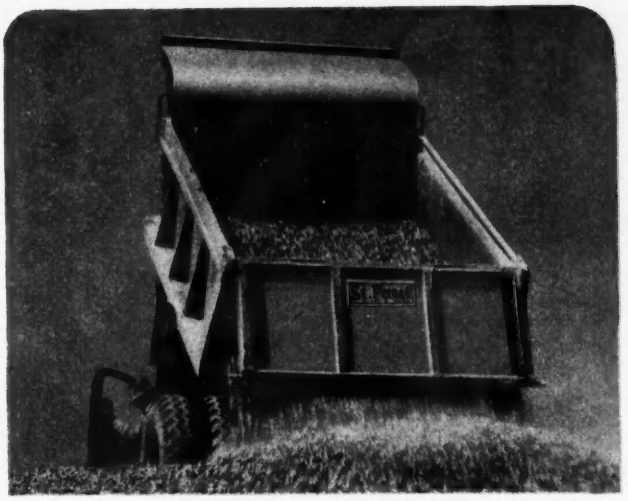
Improvements are needed in auxiliary starting aids, while assistance from fuel supplier should stem from improved fuel ignition quality, volatility, viscosity, additives and priming fluids. An engineer examines cold starting problems and shows where we stand today. Page 72.

IHC's New L-Line

International Harvester uses all valve-in-head engines with the new Silver Diamond, the Super Blue and the Super Red. Roomier cabs, improved dimensions and power train changes characterize the line. Page 76.

1950 Diamond T's

"Quick-Detachable" fenders are now used on all models. New cab streamlining, shorter wheelbases, improved engines are featured in the 1950 line of 420, 520 and 620 models. See page 80.



At your Service...
the complete St.Paul line

Dump IT HOISTS

A Dump It Hoist makes a dump truck out of any platform body type of truck. Users on farms, in lumber yards and industries are finding that *dumping* the loads saves time, labor and money.

STANDARD DUTY

With dump bodies of 8 to 10 ft. lengths and 2 to 5 cu. yd. capacities St.Paul offers four arm-type hoist models. These units are used on trucks with a nominal rating of 1½ to 3 tons. All have the new St.Paul roller-bearing pump, honed cylinders, cast steel lifting arms and links.

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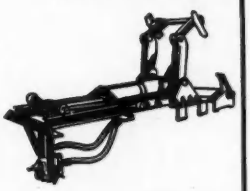
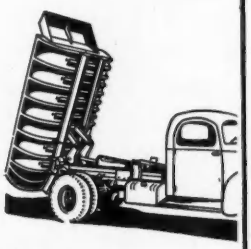
For trucks with a nominal rating of 3 to 10 tons and for trailer installations the St.Paul line includes 3 hoists (Models 7, 85 and 95) and two series of heavy duty bodies (8 gauge and 10 gauge steel). Body capacities may be up to 10 cubic yards.



HI-DUMPERS

For quarrying or mining operations St.Paul provides Excavator type bodies of ¼" steel plate with I-beam outside bracing. For dumping this type of body in capacities up to 8 cu. yd. we offer the St.Paul line of Hi-Dumper Hoists with dumping angle of 70°.



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Assure it with the oil that keeps engines clean—

TEXACO D-303 MOTOR OIL

FULL power in the pinches . . . smooth, trouble-free operation all the time . . . that's your assurance when you use *Texaco D-303 Motor Oil.* Operators' experience everywhere proves this fully detergent, dispersive oil assures more mileage between overhauls, lower maintenance costs.

Texaco D-303 Motor Oil cleans as it lubricates. Rings stay free . . . valves act lively and seat properly . . . because *D-303* gives sludge, varnish and hard carbon no chance to form. In addition, it protects alloy bearings against corrosion . . . guards moving parts against scuffing and wear.

Give chassis parts all-weather protection, too. Lubricate with *Texaco Marfak.* It won't jolt or squeeze out of bearings . . . resists washout . . . protects against rust and wear. In wheel bearings, use *Texaco Marfak Heavy Duty.* No seasonal change is required.

Let a Texaco Lubrication Engineer work with you to simplify your Lubrication procedures, reduce your maintenance and operating costs. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write:

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FOR THE TRUCKING INDUSTRY

CONFERENCE CORNER

BONDED BRAKE LINING . . .

Question:

What Future Developments Can the Fleetman Expect in the Way of Bonded Brake Lining for Heavy-Duty Applications?

The Bonded Process is Best— If Work is Properly Done

by J. R. Glazebrook
Johns-Manville Corporation

"We believe that in general most of the claimed advantages are possible and within the reach of service station operators, *provided the work is properly done.* Therefore, these comments will be random ones primarily directed at the points of caution which must be observed in successfully conducted bonding operations and in directing attention to some of the economic phases of the subject.

"First, the process of applying lining to shoes by a thermosetting cement (the industry has, to our knowledge, been unable to develop a satisfactory cold setting or air-drying cement) is vastly different from the conventional mechanical method of rivet application. In the latter, a satisfactory job can be inspected visually with a reasonable degree of reliability; whereas it is extremely difficult to detect a weak cement bond by inspection, particularly if the cement is not visible at the edge of the shoe. Through several years experience it has been found absolutely essential to provide "follow-up" pressure in the clamping mechanism during the entire baking operation. Failures have been traced to use of a clamping system which releases or relaxes pressure as the work comes up to temperature.

"Another very important factor entirely absent with riveting is that of deterioration of the cement with age. All cements that we are familiar with have a relatively short useful life even under favorable conditions; something like a year at best. This will be shortened if the material is carelessly stored near heat. In other words, a label marked, 'Store in a cool place and use before such-and-such a date,' would have to be used and complied with to insure satisfactory application.

"In cements packed in liquid form for brush application, drying the solvent requires either time or a drying oven operation. If the latter reaches too high a temperature, partial setting up of the cement will take place with subsequent loss of strength in service.

"Attention is called to the economic aspects of cement bonding. An ordinary riveting machine costs in the vicinity of $200 new. In addition to this low price, practically every service station today is already equipped with such a machine. A very rough figure for the investment in cement bonding equipment in the smaller sizes is probably in the neighborhood of $500. The operating costs, including power for the oven, are small, but, of course, considerably greater than the upkeep of a riveting machine. We do not mean to imply by the foregoing, that cement bonding is considerably more expensive than riveting when a thoroughly experienced operator, properly set up, carries out the work.

(TURN TO PAGE 10, PLEASE)

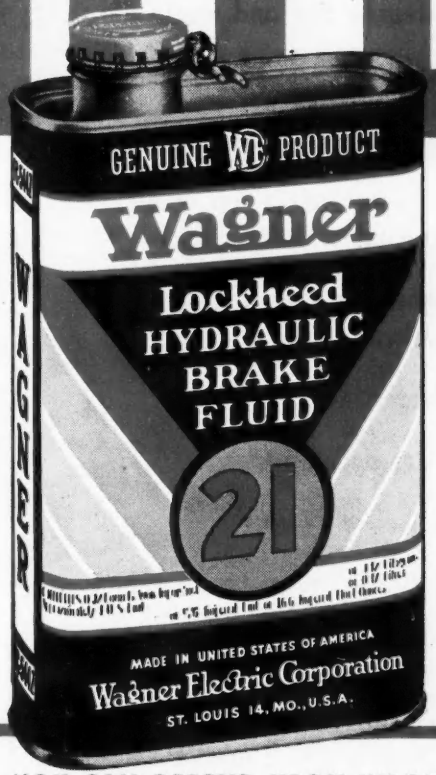
WAGNER LOCKHEED

Wagner Lockheed Hydraulic Brake Fluid is a proved and accepted brake fluid. It is unsurpassed for dependable performance, and mixes with all other approved types of brake fluid. As an all-season fluid it functions perfectly under all driving temperatures.

Wagner Lockheed Hydraulic Brake Fluid is used by car, truck, and bus manufacturers. It is warehoused throughout the U. S. and Canada, and, like Lockheed Hydraulic Brake Parts and CoMaX Brake Lining, is available everywhere through Wagner jobbers.

* * *

For added safety . . . get Wagner Air Brakes—the *only* air brake with the Rotary Compressor.



★ **REFILL** with genuine Wagner Lockheed Brake Fluid

★ **RELINE** with Wagner CoMaX Brake Lining

★ **REPAIR** with genuine Wagner Lockheed Hydraulic Brake Parts

Ask for Bulletins HU-176 and HU-197 . . . *Tips for Better Brake Service—free on request.*

Wagner Electric Corporation

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YOU CAN DEPEND UPON WAGNER QUALITY BECAUSE . . . WAGNER PRODUCTS ARE USED AS ORIGINAL EQUIPMENT BY AUTOMOBILE MANUFACTURERS.

"The Aluminum jobs win out on

... reports Dayton Power & Light Co. after 14 years' experience with lightweight Line Truck Bodies

- Over 50% saving in body weight
- Greatly increased body life
- 30% less paint maintenance
- No interior painting
- More payload
- Better gas and oil mileage
- Increased tire and brake life
- 55% saving in license fees
- Quicker, easier repair
- Easier to handle, on or off the road
- Higher top speed, faster acceleration
- Greater utility
- Better appearance

★ ★ ★

For additional information on the advantages of Alcoa Aluminum in line truck bodies, contact your nearby Alcoa Sales Office, or write for your free copy of the article reprint, "Lightenin' Up". ALUMINUM COMPANY OF AMERICA, 2139M Gulf Building, Pittsburgh 19, Penna.

Back in 1935, Dayton Power & Light Co. pioneered aluminum line bodies. Since then, they've kept complete service records, comparing lightweight and heavy metal units. Now they report, "The aluminum jobs won out on every count!" Dayton has not scrapped a single aluminum body. Every one in their lightweight fleet of over 60 is in good condition. Thanks to Alcoa Aluminum's resistance to corrosion, maintenance has been confined to repairs due to accidents and exterior refinishing.

Like numerous other utilities, Dayton Power & Light Co. uses line bodies built by Thompson Trailer Corp., Alexandria, Va. Every lightweight Thompson body permits either increased payload or the economy of a smaller chassis.

ALCOA FIRST IN **ALUMINUM**

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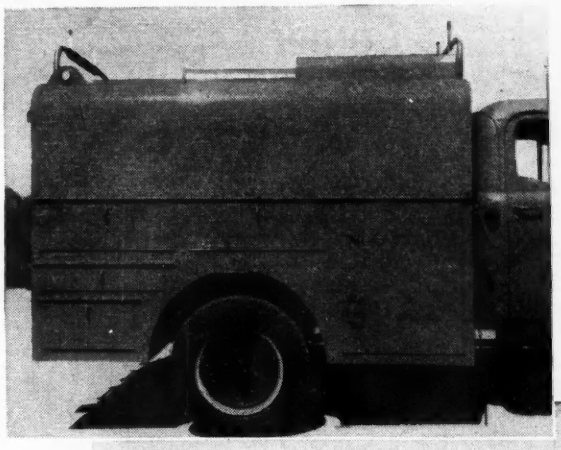
every count!"



Carolina Power & Light Co.

"We feel we are lengthening the life of our chassis by reducing body weight—and are definitely producing more work with these aluminum units. The thickness of sheet and structural members in our Thompson bodies makes them at least equal in strength to steel bodies."

Virginia Electric & Power Co.

This half-ton meter and service body, built by Thompson Trailer Corp., weighs 450 lbs. less than a steel body. Yet the bins give 20 cu. ft. more space—carry 80 meters instead of the 30 carried in a steel body. VEPCO has a total of 69 all-aluminum bodies in service.

..THE METAL THAT *LASTS*

ALCOA ALUMINUM ®

ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS

Conference Corner

Continued from Page 6

However, we do mean to say there will likely be an appreciable difference in cost between the present simple riveting method and the initial attempts of jobbers and service stations to use cement bonding. The possibility of carrying out bonding operations at a central point is, of course, quite feasible and has many attractions, but becomes a question of how much can be spent by the trade to ship metal over the country.

"On the advantageous side of the subject from the operator's standpoint, there is a distinct advance in mileage to be obtained from the elimination of rivets. A recent limited but carefully observed test of a taxicab operation indicated about 40 per cent increase in service life from a set of lining that was bonded compared with the life of the same material riveted. This, however, is merely in agreement with the available additional travel of the shoe of approximately 1/3 before using up all the lining. Taxi companies report reductions in drum scoring due to rivet heads after excessive wear.

"The foregoing comments must not be construed as opposing or denouncing cement bonding methods, because they have been tried and used over a period of many years, and the technical soundness of the method has been proven; however, there are certain fundamental factors which are of great importance to its success and which occur primarily because of the great difference between a mechanical method of application and a chemical method."

Safety and Economy Favors the Use of Rivets

by Thomas L. Gatke, President Gatke Corporation

"In my judgment there is no good reason for bonding brake linings, either to passenger cars or trucks, and the latter seems most impractical. The riveting job is adequate in every respect.

"While it is true some brake drums are scored in line with the rivet holes, this might be due to the use of hard rivets and wearing the linings beyond the point where it is safe. Ordinarily when you wear to make contact with rivets some part of the lining will be worn all the way through to the shoe, and the shoe will come in contact with the drum. There are millions of replacement installations made every year where there is no scoring of the drums in line with the rivets.

"It is assumed by advocates of bonding that extraneous matter within the brake drums lies dormant, yet we know that centrifugal force caused by the revolving drums keeps this extraneous matter in suspension just as water is kept in suspension until it is forced out of the drum.

"Brake shoes in general are installed in a vertical position, and the constant vibration caused by the vehicle in motion would prevent any deposit of any extraneous matter in the rivet holes.

"I would say that economy and safety, and the fact that every shop all over the country is set up adequately to do a riveting job favors the use of rivets."

Less Wear and Improved Friction Possible With Bonded Linings

by J. A. McLaine Thermoid Company

"The advantages claimed for bonded lining over riveted lining are as follows:

"1. Greater usable lining thickness due to elimination of rivets resulting in longer lining life.

"2. No rivet holes to collect abrasive material which could score brake drums.

"3. Slightly increased friction surface because chamfers on ends of lining and rivet holes are eliminated.

"As with any new process, there have been 'bugs' which have had to be worked out. One of the most serious troubles was due to the fact that the cement used did not age very well, especially in the warmer sections of the country. This difficulty has been eliminated by supplying the cement in tape form and in addition supplying a special bonding fluid to paint on the back of the lining and on the face of the shoe just prior to putting the bonding tape in place. The use of this special bonding fluid makes certain that the bonding tape will do a good job of holding the lining to the shoe.

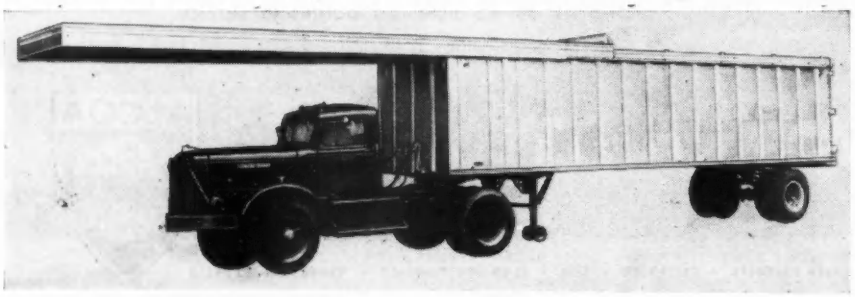
"At first it was thought best to have a solid bonding job using cement or tape across the full width of the shoe. However, it was found that the tendency toward brake noise was decreased if the cement did not cover the entire shoe surface.

"An air cushion provided between lining and shoe which has proved very helpful in reducing the tendency toward brake noise. It is also important to have the shoe surface cleaned to a bright metallic finish before bonding.

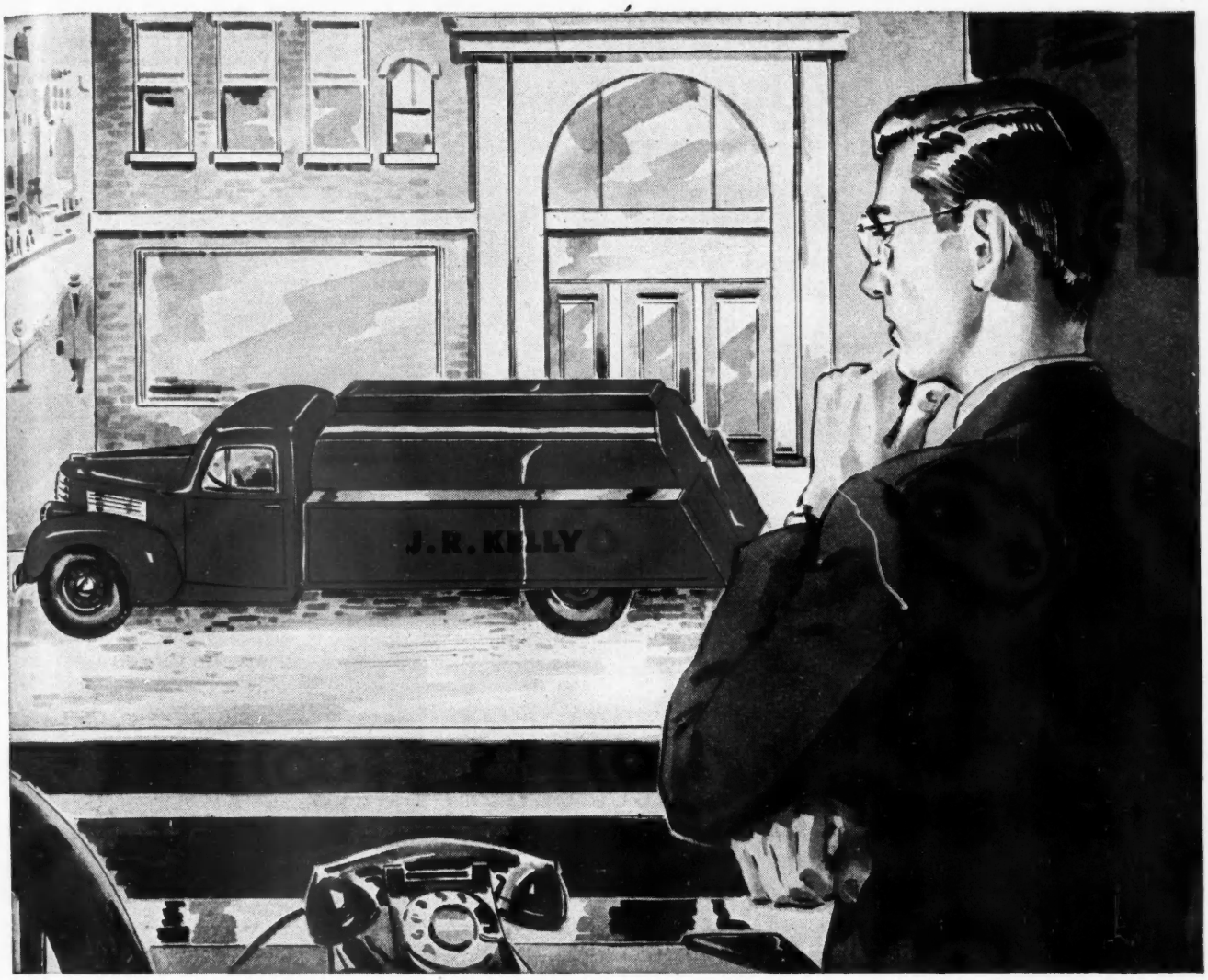
"Brake lining has been furnished with the bonding cement on the back, but this can only be done on fast moving numbers because of the deterioration of the cement with age. It has been reported that a 'reactivating' fluid has been developed in paint on cement of this type which has aged too much, but there is the problem of knowing when this must be done plus the expense of doing it.

"An advantage of using the cement in the tape form is that it can be obtained in two thicknesses. The oversize tape (.030 in. thick) can be used with standard thickness lining where the drums have been refaced.

Strickroof Dual-Purpose Trailer



A crank inserted near the lower right front corner rolls the roof forward about 26 ft in 90 seconds. First introduced at the ATA convention, this newest development by Strick Co., Philadelphia, combines the advantages of all weather protection with the convenience of open-top crane loading



Someone's looking at your truck...

Is it making a good impression?

People are quick to judge by appearances. Shabby, neglected-looking trucks can hurt your company's good name. But when your trucks look attractive, they enhance your company's prestige. Your name makes a better, more lasting impression on the public.

Make sure your trucks are promoting your good name. Keep them looking their best with Du Pont DULUX Enamel. Tough, handsome DULUX has long been first choice with the majority of truck and bus fleet operators. Easy to work with, its rugged durability on the road means fewer visits to the paint shop. DULUX resists the hazards of traffic gases, greases, oils, bad weather and rough handling. From start to finish . . . use Du Pont Finishes. E. I. du Pont de Nemours & Co. (Inc.), Refinish Sales, Wilmington 98, Del.

FOR A COMPLETE JOB—Du Pont Preparakote, the primer that *fills*, is specially formulated to work with DULUX. It goes on easily, dries fast, and stays put! From start to *finish*... use Du Pont finishes.

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ENAMEL
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

SAVINGS IN LICENSE FEES MORE THAN PAY YEARLY MAINTENANCE BILLS

◀ The 534 gleaming, attractive Stainless Steel units of The Norwalk Truck Line Company are a familiar sight on the highways of Ohio, Michigan, Indiana and Illinois.

▼ Charles W. Hoke, Norwalk Vice-President, points to the excellent condition of this eight-year-old Stainless highway veteran.

Mr. Ernsthausen

No wonder this fleet operator says

"nothing equals Stainless Steel"

The Norwalk Truck Line Company, Norwalk, Ohio, operates a fleet of 534 Stainless Steel trailers, which, on the basis of low maintenance costs alone, are proving every day that Stainless equipment always pays off in greater profits. Says Norwalk President J. F. Ernsthausen:

"In 1948, the average cost of repairs to our Stainless trailers, exclusive of floors and wrecks, was only $17.96. This figure is all the more outstanding when you consider that 149 of these Stainless trailers are at least eight years old.

"Today, these pre-war Stainless trailers show no appreciable deterioration from a fatigue angle. They appear to be ready for additional service for an indefinite period.

"And here's another important saving that our Stainless equipment makes possible. License plates for each unit cost approximately $20 less than for equipment built from heavier materials. This more than offsets the annual maintenance bill for each unit so that maintenance, in effect, has cost us nothing."

If these were the only savings made possible by Stainless Steel trailers, they'd still be a profitable investment for any fleet. But when you add the increased pay loads they can carry, the longer life, the absolute freedom from corrosion, the elimination of painting costs, and the more attractive appearance that Stainless equipment assures, you can see why it's simply poor economy to use any less efficient material.

When you order Stainless Steel trailers, be sure to specify U·S·S Stainless. It's a perfected, service-tested material that permits fabricators to use the widest latitude in design and the most modern, economical techniques of manufacturing. It will give you performance that can't be surpassed.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO · CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
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NEW PERFORMANCE • NEW DEPENDABILITY • NEW SAFETY

... they're all yours in the

NEW DELUXE WALKER "Series 900"

8 MODELS 1½ to 50 tons capacity

PORTABLE HYDRAULIC JACKS with the new projectile tank

● Few products in the field of hydraulic lifting equipment have so fine a background of performance, dependability, and safety as the new Deluxe Walker "Series 900" Portable Hydraulic Jacks. Backed by years of careful, constantly refining engineering, they have a continuing approach to true perfection. Years of manufacturing "Know-How" . . . precision production . . . inherent fine quality have been compressed into these fine hydraulic jacks.

The new "Projectile" tank—designed in the shape of a heavy armor piercing shell—withstands greater shock . . . distributes the weight of the load more evenly, more completely to the heavy base . . . resists damage from eccentric loading which every jack is subject to.

But the "Projectile" tank is not the only new feature that distinguishes the new Deluxe "Series 900." Cup leathers have been redesigned and improved . . . new tolerances and "quality controls" assure more positive packing . . . and in models of 5-ton capacity or more, the revolutionary new Walker "I. S. D." power cylinder assures longer service and finer performance.

• • •

Yes, these are great jacks — great not only in their finer precision manufacture, their rugged "can-take-it" construction, their smooth dependable operation—but great because the combination of all these outstanding characteristics create a dollar-for-dollar value that cannot be duplicated.

WALKER MANUFACTURING CO. OF WISCONSIN • RACINE, WISCONSIN

Walker Jacks, Lifts, Silencers, and Oil Filters

WALKER *leads in* JACKS

These Major Racing Events of 1949

WERE WON WITH ENGINES EQUIPPED WITH

DEPENDABLE

CHAMPION

SPARK PLUGS

100-MILE NATIONAL AAA CHAMPIONSHIP AUTOMOBILE RACES

Arlington Downs, Texas
Milwaukee, Wisc.
Trenton, N. J.
DuQuoin, Ill.
Syracuse, N. Y.
Detroit, Mich.
Springfield, Ill.
Langhorne, Pa.
Sacramento, Cal.
Milwaukee (200 miles)
Del Mar, Cal.

UNLIMITED CLASS SPEEDBOATS

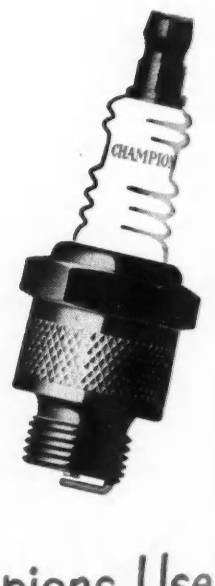
Gold Cup
Silver Cup
Harmsworth
Gull Lake
Detroit Memorial
President's Cup
U. S. Speed Record Run
Detroit River Marathon

OUTBOARD MOTORBOATS

National Outboard Regatta
15 out of 17 first places
Albany to New York Marathon
Portland, Oregon Marathon

OTHER AUTO RACING CLASSICS

Pike's Peak Climb
Mille Miglia (Italian 1000-mile race)
Grand Prix of Brussels
Grand Prix of Holland
LeMans (France) 24-hour race
Belgian 24-hour race
Grand Prix of Rome
Grand Prix of Bari (Italy)
Grand Prix of Europe (Monza)
Grand Prix of Switzerland
National Midget Car Championship, DuQuoin, Ill.



THESE ARE BUT A FEW OF LITERALLY HUNDREDS AND HUNDREDS OF VICTORIES ACHIEVED BY CHAMPION EQUIPPED ENGINES THIS YEAR IN NEARLY EVERY TYPE AND CLASSIFICATION OF RACING! THE CHAMPIONSHIP PERFORMANCE OF DEPENDABLE CHAMPION SPARK PLUGS IS A MATTER OF RECORD, UNEQUALLED BY ANY OTHER SPARK PLUG!

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

Follow the Experts—Use the Spark Plugs Champions Use!

Listen to the CHAMPION ROLL CALL . . . Harry Wismer's fast sportscast every Friday night, over the ABC network

SERVICE NOTES

Briefed for Fleets From Manufacturers' Bulletins

Chevrolet

Upper Control Shaft Bushing

The 1949 passenger car shop manual specifies an assembly torque of 45-60 ft lb for assembly of upper control arm pivot pin bushings and shaft bushings. Under certain conditions, when replacing arms or bushings, torque loads in excess of 45 ft lb may cause distortion and binding of the upper control arm and possible stripping of the threads in the arm.

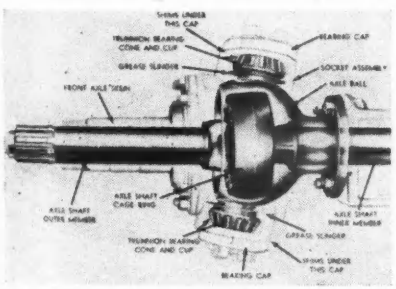
To avoid this condition the torque specifications have been changed in production and service.

New Torque Specifications

Upper Control Arm Pivot Pin Bushings	30-40 ft lb
Upper Control Arm Shaft Bushings	30-40 ft lb

FWD

New Style Front Axle ("U" Series)



A new style "U" series front axle provides the inclined trunnion type of steering knuckle and is equipped with tapered roller trunnion bearings which are shim adjusted.

Older style "U" series axles are equipped with bushing type trunnion bearings and these axles may be changed to the new style very easily in the field.

The major parts which must be replaced on the former "U" series front axle to accomplish the change-over are the axle ball assemblies, axle shafts, socket assemblies, front skeins, front wheels, brake backing plate assemblies, brake drums, steering arms and tie rod assembly.

The present housings plus all the differential parts need not be changed.

Due to the more modern engineering design incorporated in the new style "U" axle, the change-over will provide improved steering, longer life of the component steering knuckle parts, and more efficient maintenance due to simplified steering knuckle adjustment methods.

IHC

Self-Locking Propeller Shaft Flange Mounting Nut

A self-locking nut has replaced the slotted nut and cotter pin used to retain the propeller shaft flange on the rear axle differential pinion shaft. Use of the self-locking nut eliminates the necessity of the cotter pin hole in the differential pinion shaft. The self-locking propeller shaft companion flange nut can be used on differential pinion shafts having the cotter pin holes.

The ¾ and ⅞-in. self-locking nuts should be drawn up tight by applying approximately 108 lb on a 24-in. wrench or tighten to 215 ft lb, using a tension indicating wrench.

The 1⅛-in. self-locking nuts should be drawn up tight by applying approximately 145 lb on a 24-in. wrench or tighten to 290 ft lb, using a tension indicating wrench.

Hydrovac Inspection

If the air cleaner to hydrovac hose becomes deteriorated, dust will be drawn into the engine causing rapid engine wear and premature engine failure. A periodic inspection should be made of the hydrovac to air cleaner hose and, if found deteriorated, replaced with a new hose. All hose connections must be tight.

Fan Breakage—K-5, KB-5 Series

Fan breakage on above model chassis is caused by insufficient clearance between fan blades and radiator upper cross brace rod permitting fan blades to strike radiator upper cross brace rod. Additional clearance can be obtained by bending the radiator upper brace cross rod upward away from the fan blades. Clearance between the end of the fan blades and the radiator upper cross brace rod must not be less than ⅜ in.

Overrich Fuel Mixture

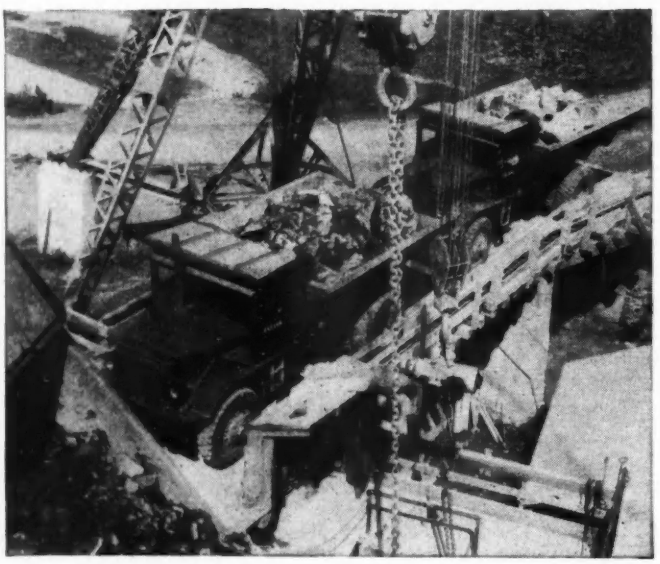
D, HD, GRD, FA, FAB, FAC, and BLD engines with Zenith downdraft carburetor—Engines equipped with the Zenith model 228BV11 universal carburetor in which an over-rich fuel mixture just above idle speed is being experienced can be corrected by increasing the size of the idle air bleed hole in the fuel bowl cover from .035 to .055 in.

(TURN TO PAGE 18, PLEASE)

"So smooth I wouldn't know it was there..."

. . . that's what Edgar Bishop says about the Fuller Transmission in his new Euclid Rockhauler.

Five Euclid Rockhaulers handle 300 tons an hour over the steep haul road from pit to crusher.

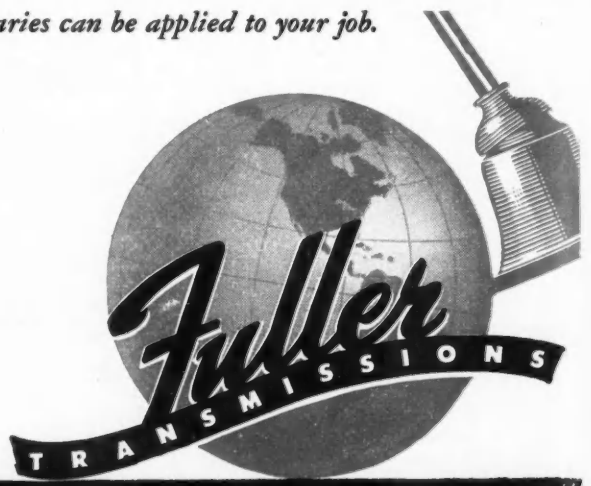


Two of the General Crushed Stone Company's haulers waiting to unload at the crusher.

The five Euclid Rockhaulers at The General Crushed Stone Company, Glen Mills, Pa., are equipped with Fuller 5A920 Transmissions. Hauling heavy loads up steep grades, drivers like Edgar Bishop appreciate the *extra* smoothness in quiet-running, easy-shifting Fuller Transmissions.

Whatever the operating conditions—heavy loads on steep grades . . . empty runs on level roads—Fuller Transmissions and Auxiliaries have the wide range of gear ratios that lets your trucks take them in stride.

Write for your copy of the 12-page catalog that shows you how Fuller Transmissions and Auxiliaries can be applied to your job.



FULLER MANUFACTURING COMPANY (Transmission Division), **KALAMAZOO 13F, MICHIGAN**

Unit Drop Forge Division, Milwaukee 1, Wis. • WESTERN DISTRICT OFFICE (SALES & SERVICE—BOTH DIVISIONS), 1060 E. 11th Street, Oakland 6, Calif.

ROADSIDE REPORT *by E. M. Shepherd. Ford Model F-7 shown has a G.T.W. rating of 35,000 lbs. as a tractor. G.V.W. rating is 19,000 lbs.*

"We have reduced running time to Bakersfield by 45 minutes!"

"WE ARE OPERATING in the mountainous areas of California, Oregon and Washington at schedules heretofore unthought of in our organization," reports E. M. Shepherd. "For example, running time from Portland, Oregon, to Huntington Park, California, a distance of 1005 miles, is 31 hours. Over famed Ridge Route in Southern California, we have reduced our running time to Bakersfield by 45 minutes, and in addition have lowered our gas consumption. The driver of this unit proudly boasts that his Ford is the 'hottest' thing on the road."

Ford BIG JOBS give you an unequalled combination of payload capacity and power. No other truck with comparable horsepower has so much payload capacity with so little chassis weight. With a Ford BIG JOB this means you can carry bigger payloads within legal load limits. You can haul big loads faster. Ford's unequalled "Payload-Performance" is evidence of Bonus Built construction. Each of over 175 Ford Truck models is Bonus Built with big reserves of strength and power.

*BONUS: *"Something given in addition to what is usual or strictly due"—Webster*

FORD 1949 *Bonus* Built* TRUCKS 1959

BUILT STRONGER TO LAST LONGER

USING LATEST REGISTRATION DATA ON 6,106,000 TRUCKS, LIFE INSURANCE EXPERTS PROVE FORD TRUCKS LAST LONGER!

ONLY THE FORD BIG JOB

HAS ALL THESE FEATURES

- ★ **145-h.p. Ford V-8 engine for top performance.**
- ★ **Ford concentric dual-throat carburetor for more power, more economy.**
- ★ **Big Ford power-operated hydraulic brakes; front 16-inch by 2¼-inch; rear 15-inch by 5-inch double cylinder on F-7, 16-inch by 5-inch double cylinder on F-8. Air brakes also available for F-8.**
- ★ **Heavy duty 5-speed transmissions—overdrive or direct-in-fifth—for operating flexibility.**
- ★ **Ford Super Quadrax single speed axles; two-speed axle available in Model F-8.**
- ★ **Large diameter (10-inch) wheel bolt circle with 8 studs to allow for extra-strong hub construction.**
- ★ **Million Dollar Cab with Ford Level Action suspension for greater driving comfort.**
- ★ **Nationwide service from over 6,400 Ford Dealers.**
- ★ **Ford Bonus Built construction for long truck life.**

Gross Vehicle Weight Ratings: F-8 up to 21,500 lbs., F-7 up to 19,000 lbs. Gross Train Weight ratings: F-8 up to 39,000 lbs., F-7 up to 35,000 lbs.

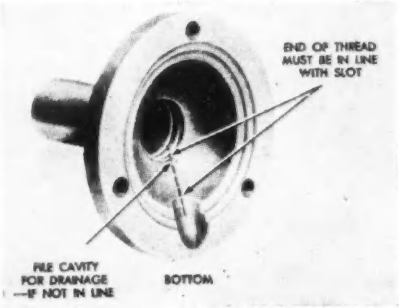
SERVICE NOTES

Briefed for Fleets From Manufacturers' Bulletins

Continued from Page 15

Plymouth

—Cause Clutch Chatter or Slippage—



If lubricant from the transmission leaks past the drive pinion bearing retainer and gets on the clutch, it may cause erratic clutch action. For complete sealing of lubricant in the transmission, the *transmission main drive bearing retainer* must be properly sealed with a gasket, and must also allow for proper drainage and return of lubricant along the pinion shaft back into the transmission case.

The *transmission main drive pinion bearing retainer* has a right hand spiral oil groove which is counter-clockwise to the rotation of the pinion and serves to prevent the leakage of oil along the pinion and out of the transmission at the retainer. The end of this spiral oil groove (or thread) should be in line with the drainage return slot at the bottom of the retainer. If the spiral oil groove ends at any other point not in line with the slot, it will then be necessary to file a cavity with a rat-tail file deep enough to extend into the first thread of the spiral oil groove, directly above the drain slot cast into the retainer. This will allow for proper lubricant return drainage, and eliminate leakage along the pinion and retainer.

The Electric Auto-Lite Co.

Commutator Service

GENERATOR commutators should be turned by mounting them in a lathe on shaft bearing surfaces and not by shaft centers, as the centers are provided for turning the shaft only, and are not necessarily concentric with the commutator brush surface.

Commutator risers should not be turned, as the brushes do not run on this surface, and any turning reduces the current carrying capacity of the risers. The outer end of the commutator bars should not be turned as it may affect the balance of the armature and reduce the brush surface.

Commutators should be turned at a speed of about 700 rpm with a sharp tool set exactly on center so that a smooth surface can be produced with very little sanding. After turning it should be checked with a dial gage.

Insulation between commutator bars should be undercut 1/32 in. Do not permit the under cutter shaft to rub on the commutator bars, as this would produce flat spots on the commutator, reducing the contact area of the brushes. Saw used for undercutting should be approximately .002 in. wider than the insulation between bars to insure complete cutting of the insulation.

Studebaker

Carburetor Vacuum Step-Up Jet— 2R16A, 2R17A

A leaner carburetor mixture, offering improved fuel economy, can be obtained in 2R16, 2R16A, 2R17, and 2R17A trucks with an 8 per cent leaner step-up jet without affecting the power at wide open throttle.

The step-up jet is Part No. 679288 (Carter No. 149-56S) and entered production in June. The original jet, Part No. 675440, one step rich, will continue to be available for service use where it is found desirable.

Carburetors produced with the 8 per cent leaner jet will carry the same part number (674551), but the model number is changed to BBR1-606SA for purposes of identification.

Leak at Water Pump Gasket—6G, 7G, 8G

In a few cases it has been found that loss of water from the cooling system is traceable to a low spot on the machined face of the water pump housing in the cylinder block. This point is on the pressure side of the pump and engine and may permit a gradual coolant loss during warm up or at speeds where block pressure is developed. The point of leakage is entirely hidden by the inlet part of the pump casting and is therefore difficult to detect.

If a leak is found at this source, additional gaskets should be installed and coated with a good gasket sealer.

Standard Motor Parts

Delco-Remy Breaker Points

Trouble is sometimes experienced in the installation of Delco-Remy type points sets, No. DR-1236 and DR-1236X. The DR-112 breaker arm rib hits its tension spring with the result that some mechanics have had to file down the rib of the arm. This is due to improper installation.

In this point set, the tension spring of the movable arm to be fastened to a bakelite strip mounted on the stationary arm. The tension spring must be placed on the outside of the bakelite strip. Trouble arises only when an attempt is made to place the spring on the inside of the bakelite strip.

McQuay-Norris

Refacing Valves

McQUAY-NORRIS recommends grinding of the valve face angle slightly smaller than the seat angle in a move to improve valve life and engine operation. This results in a positive initial seating toward the outer edge of the valve face, thereby insuring a better gas seal and a somewhat cooler valve at high combustion temperatures.

The difference in angles should be ½ deg, just enough to produce the initial contact at the outer edge of the seat. This contact gradually widens to give long mileage to the valve job.

Extreme care must be exercised in following this recommendation, since the difference in angles must not be more than 1 deg. To produce the ½-deg difference it is best to grind the full 30 or 45-deg angle on the seat by using a modern hard seat grinder. Keep the stone dressed accurately to the exact angle. Then reface the valves to an angle of 29½ deg or 44½ deg by setting the pivoted chuck spindle on the valve refacing machine to a slightly sharper angle than the full 30 or 45 deg graduation on the carriage.

TRUCKTORED 6-WHEELERS

present profit-making opportunities that You can't afford to overlook!

The best way to increase trucking profits today is to reduce costs. Trucktored 6-Wheelers do this in several ways, most important being:

(1) They permit payloads up to twice those allowed 4-wheelers.

(2) Reduced road impact, for which 6-wheelers are noted, protects cargo and makes trucks last longer.

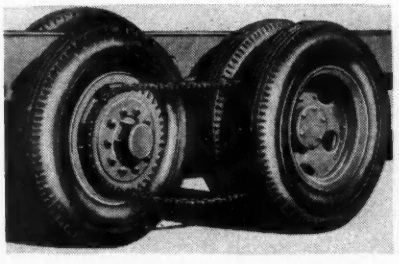
(3) Maneuverability and safety of 6-wheelers, reduces trip time and lessens danger of road accidents.

6-wheeler economies often pay the cost of conversion in a few weeks. And with road officials cracking down on overloads, 6-wheelers prevent time-consuming cargo transfers and even fines. Send for further information.

THE TRUCKTOR CORPORATION
156 Wilson Avenue, Newark 5, N. J.

Trucktor Features

1. Carry up to double the payloads
2. Greater safety
3. Low operating costs
4. Low maintenance costs
5. Low first cost
6. Less dead weight
7. Longer vehicle life
8. Less damage to fragile loads

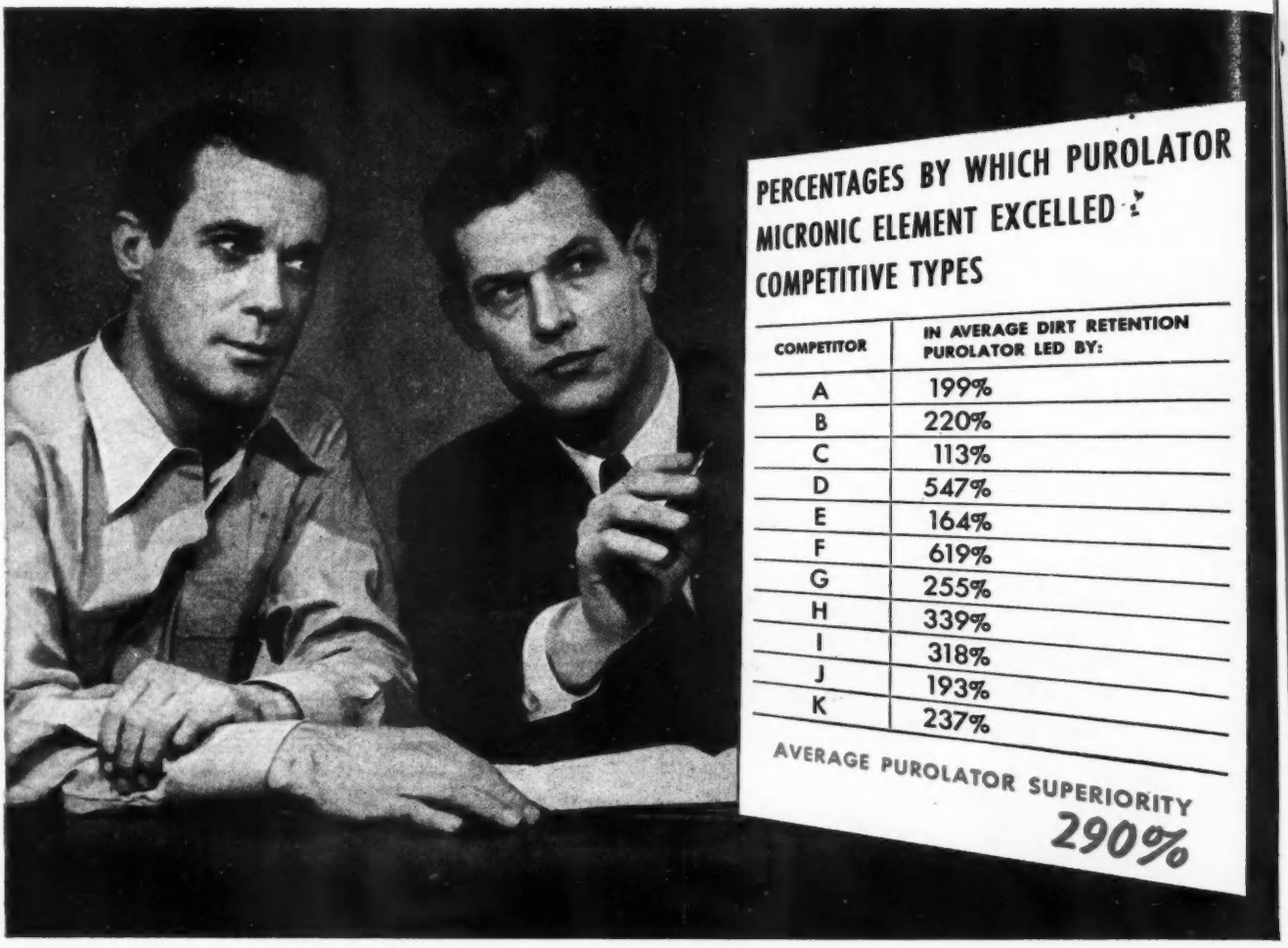


TRUCKTOR DETACHABLE CHAIN AND SPROCKET FOUR-WHEEL DRIVE.

Safety **IS NO ACCIDENT**

Trucktor AXLES

★ ***ALSO MANUFACTURERS OF TRUCKTOR SINGLE AND TANDEM TRAILER AXLES*** ★



"Pass up the fancy talk—take Purolator's proof of greater engine protection!"

WHY BE SOLD on a second-rate oil filter . . . when it's just as easy to buy Purolator's *complete* filtration. The test results above are *proof* that the Purolator Micronic Oil Filter gives your fleet engines *greater* protection from dirt and abrasives . . . cuts lay-up time by preventing unnecessary engine repairs.

And it's all because of Purolator's exclusive Micronic element!

This *Micronic* element filters particles measured in microns (.000039 of an inch) . . . has an accordion-pleated design that provides a filtering surface 5 times that of old-style filters. Thus—it removes 290% more engine-wrecking abrasives from the oil stream . . . does not permit channeling or unloading.

Guard against down-time and unnecessary repair bills by equipping your entire fleet with Purolator Micronic Oil Filters *now*. Your nearby Purolator supplier has a genuine Purolator Refill for almost every type of vehicle and oil filter made.

PUROLATOR PRODUCTS INC.
Newark 2, New Jersey
and Windsor, Ontario, Canada

PUROLATOR
MICRONIC OIL FILTER
"FIRST IN THE FIELD OF FILTERING"

For sure-fire starting

the Heavy-Duty® YKL

FOR extra-active starting power—longer battery life — tougher, more rugged construction, Goodyear's HEAVY-DUTY YKL is your best battery bet. Just check point for point the features listed in the panel and you'll know why more and more battery users always BUY and SPECIFY Goodyear's HEAVY-DUTY YKL!

This great battery is made in two types, including one for Diesel engine jobs, with specially assembled extra-heavy plates for longer life and extra starting power.

Check these points

√ *Every post and link has copper insert to carry extra current needed for heavy-duty starting.*

√ *Terminal corrosion is reduced because terminal posts are welded to lead bushings which are molded right in the battery covers preventing acid seepage.*

√ *One-piece molded case of genuine shockproof hard rubber.*

√ *All separators are made of the highest quality "slice-cut" vertical-grain wood.*

√ *More uniform plate wear assured because machine-packed plates eliminate variations in plate density.*

√ *"Packed with power" because all plates are pasted with "Activite" power-producing material.*

Free Loan to Fleet Owners

Fleet owners of 25 or more vehicles can get free loan of Goodyear's exclusive PowR SavR. It insures safe, automatic care of idle batteries right in your own garage — batteries always at power peak, instantly ready at any hour. See your Goodyear dealer for details.

YKL BATTERIES –for taxis, tractors, trucks

We think you'll like "THE GREATEST STORY EVER TOLD"—Every Sunday—ABC Network

GOODYEAR

THE GREATEST NAME IN RUBBER

YKL, PowR SavR—T.M.'s The Goodyear Tire & Rubber Company

The OVERLOAD

EDITORIAL COMMENT

A United Campaign is More Than Charity

DESPITE the long standing title of this page (now more than 15 years) it should be made clear that the title applies to content of the magazine, not to trucks. This month, however, it could well apply to both. Since their inception, CCJ editorials have been vigorously against the practice of overloading trucks and as recently as six weeks ago the American Trucking Associations, Inc., meeting in Boston, threw its great weight behind the same idea.

For six days the conventioneers met by conferences, by special and executive committees, in small groups of old timers and newcomers, in general sessions and the directorate. For six days there were speeches, discussions and liberal dosages of grass roots thinking.

Then on the final day came concrete evidence of what at least part of that thinking was about. It came in the form of a highly significant resolution which had been coordinated with each of the 52 affiliated state associations and which contains an important safe guard in the second paragraph. Here it is in full:

"American Trucking Associations vigorously and unqualifiedly condemns the practice of violations of state truck weight laws by anyone, and pledges to all regulatory officials its active cooperation, and that of its affiliated associations, in all efforts toward elimination of this abuse where it exists.

"Condemnation by this association of such law violations is not to be construed as an endorsement of existing weight, height and length laws, where such laws are unscientific, arbitrary and conflicting, depriving the nation of full use of its highways. The trucking industry appeals to agricultural, business and government agencies for enactment, by all the states, of fair and realistic dimensional and weight statutes, not only as an aid to better law observance through elimination of unintentional violations, but as an imperative requirement for full development of both agriculture and industry."

But the resolution touched on only part of a train of thought which had permeated the atmosphere of many different sessions despite widely different topics appearing on the printed programs and announced agenda. What was that thought? For want of a better title, let's call it Unity. And let's define it as the need for a united front, the need for greater cooperation from every segment of the industry, as well as the obvious need for keeping the industry's skirts clean.

As is well known, the rail interests are stepping up the tempo of their anti-truck propaganda. The trucking industry has all the answers it needs to refute these attacks, even to launch powerful counter-offenses of its own. But to do these things, the industry needs Unity.

Many truck operators are too frequently prone to place all the blame for incidents that make the anti-truck headlines on the common carriers. They are the ones—so the story goes—who do the overloading and antagonize the railroads and the public. They are the ones that operate the "box cars" on our highways.

But who is most apt to double park on a narrow street or block a pedestrian crossing? Isn't it the private carrier? Who gets caught with upwards of 100,000 lb of steel aboard? Isn't it sometimes the contract carrier? Who makes the headlines with a disastrous fire? Isn't it sometimes the tank carrier?

The point to remember is that in John Doe Public's eye a truck is a truck and if it makes him mad, either by personal contact or by a headline in his paper, it doesn't make a bit of difference who operates it.

From our viewpoint the ATA resolution has only two weaknesses. (1) It does not go far enough and should have included careless parking, haphazard loading, tailgating, highballing and various other common offenses in its condemnation. Perhaps some day it will. And (2), it cannot reach all the people it ought to reach. Since the latter is not the fault of ATA, COMMERCIAL CAR JOURNAL adds its bit by shouting: "Hear, hear!"

Bart Rawson
Editor

Plenty tough to balance!

Brakes, too, are hard to balance . . . with only one type of lining!

Different shoes, even in the same type brake, do different work, because forward and reverse shoes don't carry the same share of the load, and need different types of blocks. And different *types* of brakes vary widely in brake action.

To keep all these factors in balance Grey-Rock uses several different types of friction material. They work together for *balanced* brake action!

Results: uniform wear, longer wear, lower maintenance costs. And smoother, safer stops! See your Grey-Rock jobber today for balanced linings. He has the right combinations, factory-combined and packaged for your particular vehicles. In unusual cases, he'll arrange an on-the-spot survey by Grey-Rock factory experts.

For linings ½" or less in thickness, use GREY-ROCK BALANCED TRUCKSETS . . . factory-combined and accurately drilled for popular light and medium trucks.

Grey-Rock BLOCKS for Heavy Duty Brakes

BOLT-ON BLOCKS for heavy-duty buses, trucks, and trailers
BALANCED TRUCKSETS for light and medium trucks
BALANCED BRAKSETS for passenger cars (riveted or bonded)
STANDARD WYRBAC SETS of Grey-Rock quality
VEE-LOK, Molded and Semi-Metallic CLUTCH FACINGS
FAN BELTS
RADIATOR HOSE

GREY-ROCK DIVISION
of Raybestos-Manhattan, Inc., Manheim, Pa.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Mechanical Rubber Products • Rubber Covered Equipment • Asbestos Textiles • Packings • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls.

Snow—Sleet—Blizzards—Drifts—Ice...

Every Winter Storm is an Emergency!

● 250 hp. WALTER SNOW FIGHTER with giant V-Plow and two side wings, hydraulically controlled. Total clearing width 28 ft., at 20-30 mph.

Be ready with equipment designed to meet ALL emergency requirements—

WALTER
4-POINT POSITIVE DRIVE
SNOW FIGHTERS

One-piece Snow Removal "Fleet"!

● 240 hp. Walter Snow Fighter equipped with Front Plow, Speed Wing, Center Scraper and Sand-Chemical Spreader Body. This single unit clears snow at 20-30 mph., widens and levels snowbanks — scrapes hard-packed snow — automatically spreads sand and chemicals at high speed to control icy pavements. Investigate!

KEEPING WINTER ROADS OPEN is a many-sided problem. Why risk your safety by using "single-purpose" equipment designed for other work? Build your winter maintenance program around big, fast, powerful Walter Snow Fighters—specially designed to handle ALL winter road conditions.

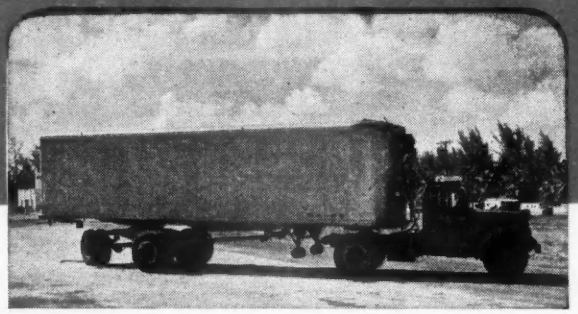
Look what you get with Walter Snow Fighters! High speed to clear more miles per hour; tremendous power for widening and drift busting; exclusive Four Point Positive Drive with 100% traction for non-slip, non-stalling operation; rugged construction for gruelling service. Plus many combinations of V-plows, front plows, side wings, center scrapers, sand-chemical spreaders to quickly overcome every road hazard.

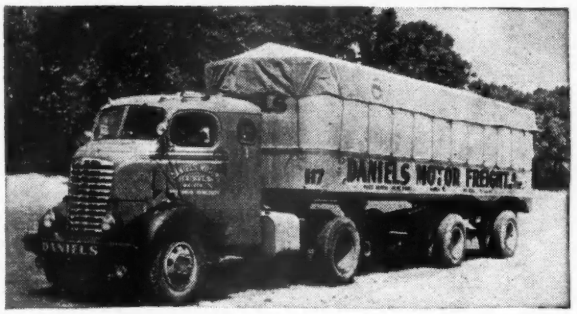
See the latest Walter Snow Fighters at your dealer. Ask for a demonstration. Detailed literature sent on request.

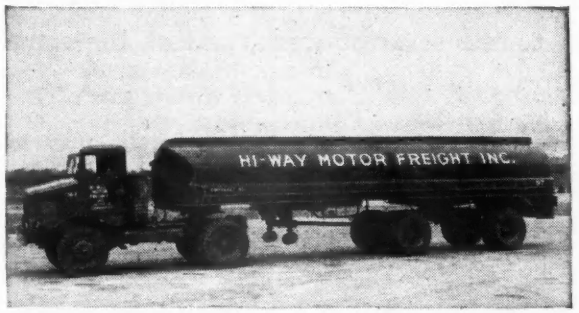
WALTER MOTOR TRUCK CO., 1001-19 Irving Ave., Ridgewood 27, Queens, L.I., N.Y.

Good for all! saves for all!

HOOBLER UNDERCARRIAGE







WHETHER you operate tankers, high-sides, vans or flat tops (28 feet and over), you can reduce operating costs and increase trucking profits with the Hoobler Undercarriage.

HERE'S WHY

The Hoobler Undercarriage allows the trailer to ease around the tightest corners or travel the straightaways, with practically no scuffing of tires.

"Outrigger" action provides greater stability on curves. Flexible, multiple support absorbs practically all road bumps. Minimum load shifting, loads ride safer.

Highly important, Hoobler axle spacing generally permits greater payloads.

Simple in design and construction, quickly inspected, easily serviced, the Hoobler Undercarriage can help *you* make savings every mile, every day, just as it does for users across the country.

For complete information, write The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL

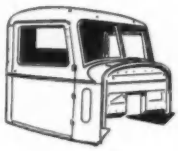
DESIGNERS AND PRODUCERS OF STEEL PRODUCTS SINCE 1906

Builder of The Hoobler Undercarriage

AUTOCAR CAB
IN A CLASS BY ITSELF

● Autocar pays premium prices for materials and labor to make cabs not just up to the average, but definitely superior to others. The cabs, like the chasses, are built for heavy-duty performance. They will stand up to the severest work, and at the same time provide completely for the driver's comfort and safety.

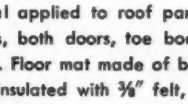
Here are a few of the features that, added together, give the Autocar cab a basic superiority:



ALL-STEEL CONSTRUCTION
The one-piece steel roof and sheet-steel panels are welded to a sturdy steel frame—insuring great structural strength.

DOORS
Of all-steel construction and hung on three heavy-duty hinges. *Heavy-duty door locks and window regulators.* Safety glass throughout. Manually controlled ventilator wings in windows.

SEATS
Separate seats for driver and assistant. Double-deck spring construction. Driver's seat has 5-way seat adjustment to insure individualized comfort.



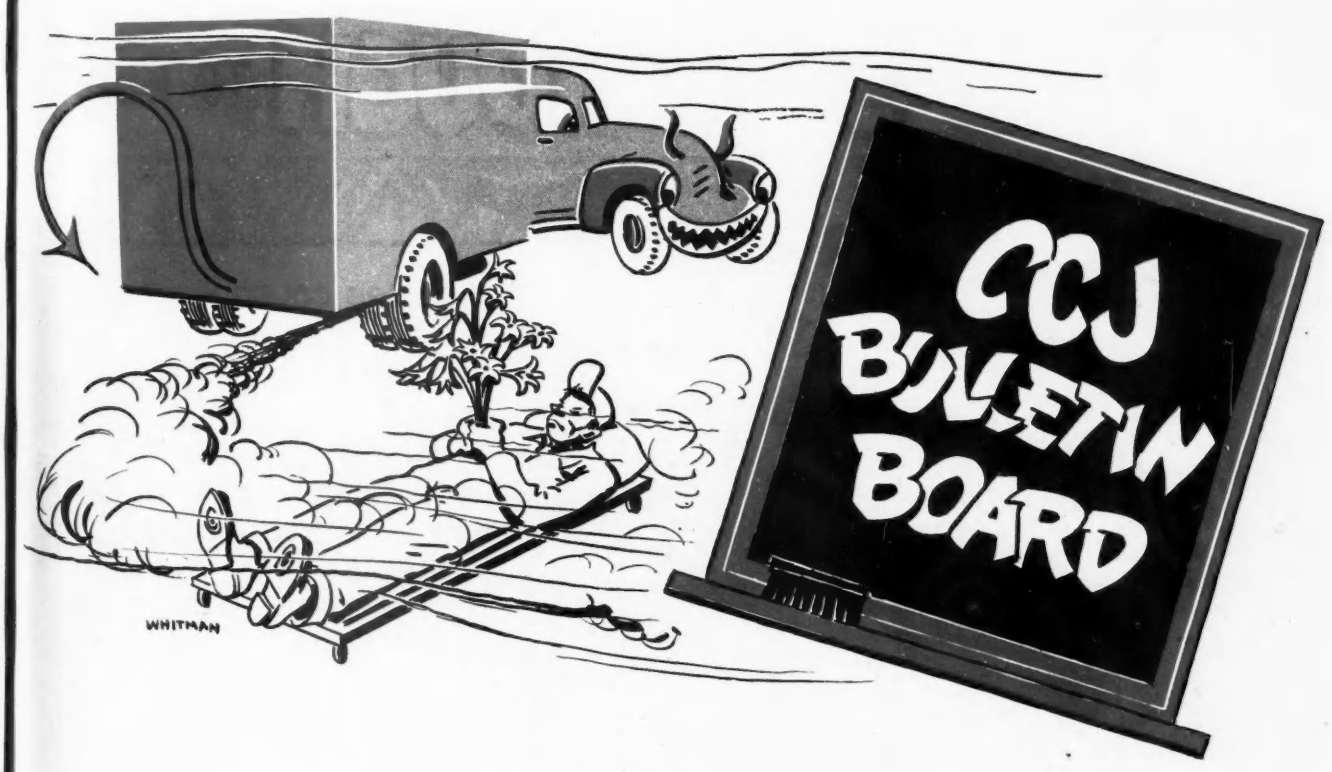
SUN VISOR
Same high-grade plastic material as that used in long-distance bus service. Visors of this kind are not found in other truck cabs.

INSULATION
Insulating material applied to roof panel, corner and back panels, both doors, toe boards, floor boards and dash. Floor mat made of best rubber obtainable, and insulated with 3/8" felt, compared with conventional 1/4".

AUTOCAR TRUCKS

THEY COST LESS, BECAUSE THEY DO MORE WORK

The Autocar Company, Ardmore, Pa. • Established 1897 • Factory Branches and Distributors from Coast to Coast



CO IS DEADLIER THAN BO

. . . Are You "Protected"?

Johnnie Doe got a bad case of CO (carbon monoxide) one day last week. He did not "offend" anyone. He was simply trying to keep the shop warmer by shutting all doors and windows even though several engines were running. He will be interred Tuesday.

Driver Moe thought he would take a snooze in a truck cab with the engine running to heat it. He didn't know the truck was standing in the yard waiting for a new exhaust pipe. Visiting hours are from 6 to 8.

Fixer Roe started up two trucks on the shop floor to set the governors. How could he remember to hook up the exhaust lines? He and his helper got to gassing and finally got a gassing. The boys won't be back to work for a few weeks yet.

Oh, it happens every day. The man who would walk a mile for a cake of soap sometimes won't walk to the end of the shop to open a window. Family men, too. We'll miss them.

Carbon monoxide is tricky. It creeps up on you without warning. You *can't* smell the stuff. Unfortunately, one of the first indications that a man has "got it" is that he is being carried out feet first. Are you headed that-a-way, Mac?

MECHANICS—You wouldn't tarry under a duck's tail while he is operating; why take a chance with a treacherous engine? Shut it off when working near the exhaust pipe.

Don't check governors or run engines too long in the shop. If you must, open windows or see that the exhaust ventilating system is hooked up.

Make a habit of looking for loose exhaust lines, damaged mufflers, unnecessary openings in the cab, where the death gas may enter.

DRIVERS—Watch for signs of exhaust fumes, evidenced by smoke or combustion odors. Keep your nose in your own business—and live to wear it longer.

Report any defect in the exhaust line as evidenced by smoke or noise. It's a good idea to examine these parts before you get behind that wheel—*each day*.

Keep the cab ventilated—either through open windows, vents or heater air intakes. Don't leave the engine running while you "take five."

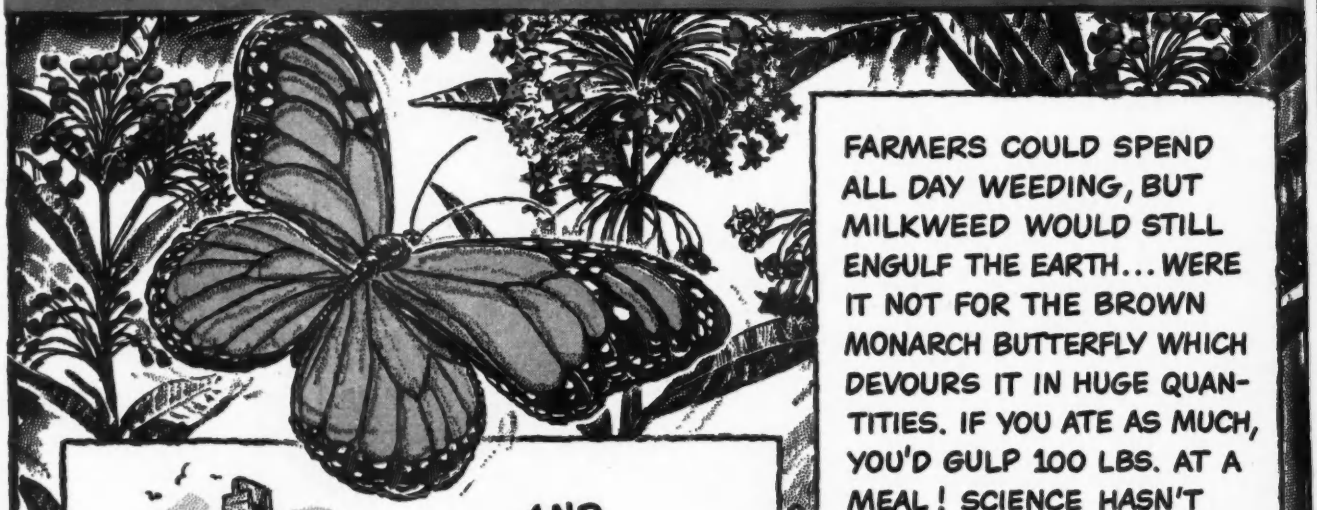
STOP—when you feel groggy, nauseous or even sleepy. It may be carbon monoxide. Quick check the vehicle, air out the cab and take a walk before you start again.

Don't rely on smell—depend on caution! For . . .

Your Nose, You Knows, is Indisposed, to Warn You of Monoxide Foes

Reprints of the above are available at nominal cost. Write the Editor.

NATURE'S BEST IS TOUGH TO BEAT



FARMERS COULD SPEND ALL DAY WEEDING, BUT MILKWEED WOULD STILL ENGULF THE EARTH... WERE IT NOT FOR THE BROWN MONARCH BUTTERFLY WHICH DEVOURS IT IN HUGE QUANTITIES. IF YOU ATE AS MUCH, YOU'D GULP 100 LBS. AT A MEAL! SCIENCE HASN'T INVENTED THE WEED KILLER THAT'S A MATCH FOR THIS BUTTERFLY!

WORLD'S FIRST DRILLED OIL WELL —THE DRAKE WELL—TITUSVILLE, PA.

AND

VEEDOL 90 H.D.

STAYS UNSURPASSED BECAUSE VEEDOL USES ONLY

NATURE'S TOUGHEST CRUDE

Instead of trying to improve on an inferior crude, Tide Water Associated starts the production of VEEDOL 90 H.D. with nature's toughest — the unsurpassable crude found in the area of Bradford, Pa. When it comes to oil, remember that *nature's toughest STAYS the toughest, and nature's toughest STANDS the toughest beating under brutal, heavy-duty conditions.*

VEEDOL 90 H.D., being naturally tougher, is naturally more resistant to heat and wear. That's why VEEDOL 90 H.D. can give that famous fighting "Film of Protection," to guarantee increased mileage between overhauls.

VEEDOL
OILS AND GREASES

FEDERAL TIRES
"GOOD FOR A LONG SAFE RIDE"

TIDE WATER ASSOCIATED OIL COMPANY

NATURE PLUS! MAN-MADE ADDITIVES WORK MIRACLES IN VEEDOL 90 H.D.!

VEEDOL 90 H.D. is a compound of scientifically selected additives, blended perfectly in naturally stable Bradford, Pennsylvania, oil, to reduce sludge and gum formation, protect bearings from corrosion, minimize lacquering of pistons and valve stems ... all with full-throttle operation.

100% BRADFORD, PENNSYLVANIA

VEEDOL

90 H.D. Motor Oil ... Cleans as you Drive

17 Battery Place, New York 4, N. Y. • Thompson Building, Tulsa 2, Oklahoma • 79 New Montgomery Street, San Francisco 20, Calif.

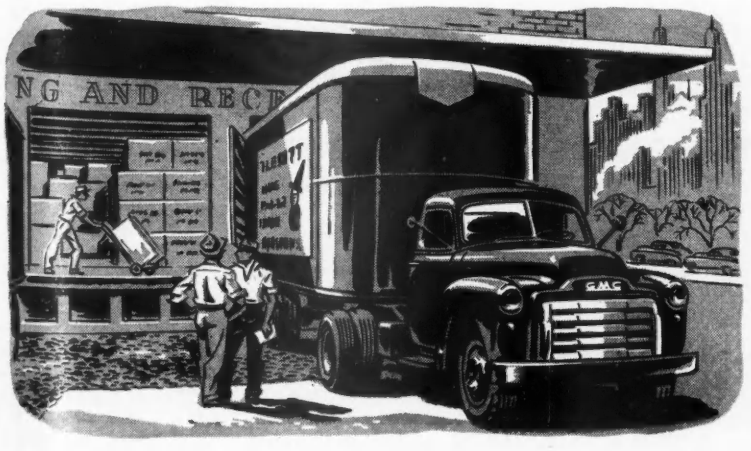
GMCs "Deliver the Goods"

Food, furniture and fuel oil... the tree, the turkey and the toys... almost everything that moves by motor truck makes its contribution toward a Merry Christmas.

Total truck tonnage has increased 120 percent in the past ten years and GMC has been a pacemaker in this rapid rise in truck transportation. Now better equipped to "deliver the goods" than ever before, tough, truck-built GMCs offer powerful, valve-in-head gasoline engines or famed, 2-cycle Diesel models . . . strong, sturdy chassis with rugged axles, springs and brakes . . . big, wide-vision, easy-riding cabs . . . outstanding performance and dependability, unexcelled efficiency and economy.

There's a better-built GMC for all hauling jobs . . . for every transportation task . . . Christmas time and all the time!

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION



GMC
GASOLINE · DIESEL
TRUCKS

GMCs are among Santa's most active helpers at Christmas time. Included in GMC's complete line, ranging from Pickups to giant Diesels, is a group of Specialized Tractors with wheelbases and CA dimensions which suit them ideally for all highway hauling the year around.

ANOTHER WIN FOR
Packard Cable
In 1949, as in previous years, Packard cable was used by the majority* of the winners of the BUS TRANSPORTATION awards!
*14 OUT OF 18.
Packard
REG. U.S. PAT. OFF.
TRADE MARK
Packard Electric Division, General Motors Corporation
Warren, Ohio
FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

No "growing pains" for this young fleet

● The five new DIVCO units shown above were put in operation recently by the Billings Laundry Company, Billings, Montana. This young fleet has passed through the important initiation period and into fullfledged operation with flying colors.

Effective lubrication by STANOLUBE HD Motor Oil kept the engines in excellent condition throughout the critical break-in period, and has helped the new fleet move into severe start-stop service *without any maintenance troubles.*

Fleet operators throughout the Midwest have discovered the benefits of starting new units on STANOLUBE HD. In new engines, STANOLUBE HD stands up under high temperatures and thus does not form harmful oil deposits. It maintains strong films of oil between tightly fitted rubbing surfaces—which prevents any scuffing or scoring of engine parts. Its detergent-dispersant action keeps contaminants harmlessly dispersed within the oil until they are removed at regular drain periods.

The same STANOLUBE HD qualities that protect engines during break-in operation also reduce maintenance trouble and expense in any type of fleet service. A trial in your fleet engines will prove it. A Standard Oil Automotive Engineer will help you make the most effective use of STANOLUBE HD Motor Oil. Your letter will obtain his services.

Write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

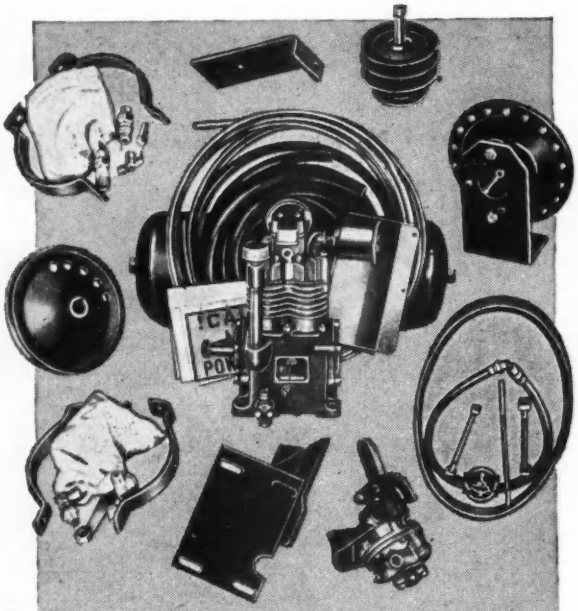
Stanolube HD Motor Oil

STANDARD OIL COMPANY (INDIANA) STANDARD

MIDLAND'S *Complete Packaged* AIR BRAKE KITS

With 7.3 Cu. Ft. Compressors

Available for all popular makes and models. Field installations—everything furnished to make a complete installation. Instructions and installation diagram in each kit.

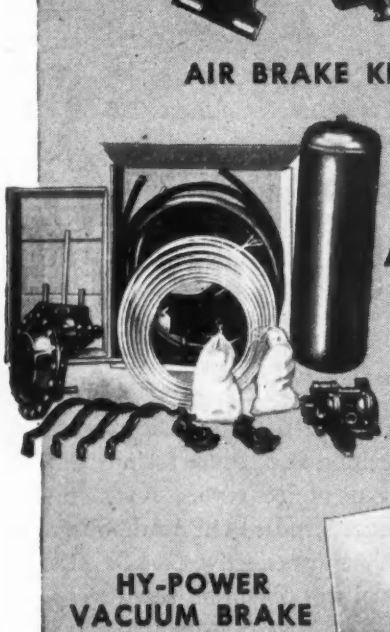


AIR BRAKE KIT

For Tractor Installation order:

- *STRAIGHT TRUCK KIT*
- *TRACTOR TO TRAILER OUTLET KIT*
- *AIR HAND CONTROL VALVE KIT*
- *AIR HORN KIT (SINGLE OR DUAL)*

Also Available: AIR CONVERSION VALVE KIT.
10 CU. FT. COMPRESSOR.



TRAILER AIR BRAKE KIT

VACUUM BRAKE KITS . . .

For all makes and models from ½ ton up. Contain Midland's HY-POWER units. Furnished in sizes to suit the vehicle.

- *STRAIGHT TRUCK KIT*
- *TRACTOR TO TRAILER OUTLET KIT*
- *VACUUM HAND CONTROL VALVE KIT*
- *SYNCHRONIZING VALVE KIT*

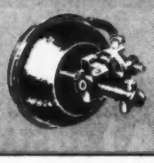
THE MIDLAND STEEL PRODUCTS CO.
6660 Mt. Elliott Avenue • Detroit 11, Mich.
Export Department: 38 Pearl St., New York, N. Y.

HY-POWER VACUUM BRAKE KIT

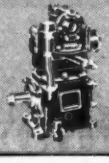
TRAILER VACUUM BRAKE KIT

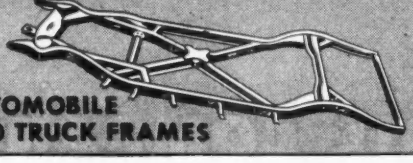
See Your Nearest MIDLAND Authorized Distributor or Branch at
1367 SO. FLOWER ST., LOS ANGELES
6105 E. CLAY ST., PORTLAND, ORE.

MIDLAND



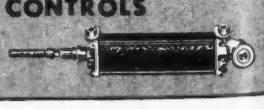
POWER BRAKES





AUTOMOBILE AND TRUCK FRAMES

BUS DOOR CONTROLS



CCJ REPORTS

on News of the Industry

The Month's Highlights . . .

Next to the resolution condemning the practice of overloading (see editorial, page 22) perhaps the most important news to come out of the American Trucking Association's convention in Boston was the election of Leland James of Consolidated Freightways, Portland, Ore., as first vice-president—a position which presumably puts him in line for the presidency a year hence. The ascension of H. D. (Buddy) Horton (Associated Transport, New York) from president to chairman, and Henry E. English (Red Ball Motor Freight Lines, Dallas) from first vice-president to president had been a foregone conclusion, but Mr. James was nominated from the floor. Other newly-elected officers include: William E. Humphreys, Jacobs Transfer Co., Washington, D. C., as 2nd vice-president; Fred B. Hufnagel of Sun Oil Co., Philadelphia, as 3rd vice-president; John Ruan, Ruan Transportation Corp., Des Moines, Iowa, as 4th vice-president; George V. Eastes, Lee & Eastes, Seattle, as treasurer, and Chester G. Moore, Central Motor Freight Assn., Chicago, as secretary. (For other convention highlights, see Nov. issue, p. 258.)

CONCURRENTLY IN CHICAGO, fleetmen whose interests center in safety activities gathered at the 37th National Safety Congress where they found the spotlight turned on activities and responsibilities of the fleet safety director. For a full report, see page 69.

IN ST. LOUIS, Nov. 2 and 3, members and guests of the Society of Automotive Engineers dug into diesel engines and lubricants throughout a two-day session marked with interesting developments. Two papers of special interest to the truck operator, with a brief on other highlights will be found on pages 72 and 73.

IN WASHINGTON, Nov. 8, the American Road Builders Association devoted much of a crowded two-day agenda to the question: "What percentage of highway costs should be paid by the Federal government?" Proponents of a higher than the present 50-50 state-Federal ratio argued that a ratio up to 75 per cent Federal would increase road building efficiency, give an added spur to interstate highway networks. Antagonists warned that more than 50-50 means deterioration of state highway departments and eventual nationalization of the nation's highway system.

Automotive Advertisers Council . . .

Meeting in Chicago during the last week of October, the Automotive Advertisers Council, representing a group of 65 automotive service industry manufacturers, launched a new campaign frankly designed to funnel a larger share of parts, accessories and equipment sales through the automotive jobber. Their slogan is simple and straight-forward, namely, "Get it from Your Jobber."

In a booklet entitled "I—Your Jobber" the Council has pointed out the unique position of the automotive wholesaler as a convenient source of supply for much needed replacement parts and equipment produced by hundreds of different manufacturers and stocked for immediate availability. Usually the jobber also maintains a well-equipped machine shop for the perfomance of many service functions.

It's something for the fleetman to consider.

On Truck Leasing . . .

The National Council of Private Motor Truck Owners, Inc., in a rejection of proposed regulations of the Interstate Commerce Commission governing motor vehicle leasing, has challenged the Commission's authority to promulgate rules or regulations on leasing by or to private truck operators, or to restrict the right of such operators to augment their equipment or facilities as their business demands.

Said the Council—leasing rules proposed are neither necessary, warranted, reasonable nor valid. Their adoption would impose unnecessary and invalid burdens and restraints upon all types of carriers and shippers alike, as well as upon interstate commerce in general.

ATA Girds for Battle . . .

Direct result of the Boston ATA conflab was a foot placed well forward by the Executive Committee. Girding its loins, the Committee decided to take the lead in bringing about formal proceedings before the Interstate Commerce Commission, with a view to obtaining relaxation of ICC rules governing self-insurance of cargo.

ICC requires that motor carriers wishing to self-insure must qualify to completely self-insure, refusing to consider applications, for example, for the right to self-insure on cargo only. This is based on the Commission's inadequate

(TURN TO PAGE 138, PLEASE)

DATES AND DOINGS

JAN. 9-13—Society of Automotive Engineers Annual Meeting, Book-Cadillac Hotel, Detroit, Mich.
JAN. 16-18—Truck-Trailer Mfrs. Assn. Annual Convention, Edgewater Gulf Hotel, Edgewater Park, Miss.
JAN. 20-21—New Mexico Motor Carriers Assn. Annual Convention, Carlsbad, N. M.
JAN. 23-27—Seminar, American Standards Association, Engineering Societies Building, 29 W. 39th St., New York City, N. Y.
JAN. 26-27—National Council of Private Motor Truck Owners Annual Meeting, Commodore Hotel, New York, N. Y.
FEB. 5-8—National Automobile Dealers Equipment Assn., Convention Hall, Atlantic City, N. J.
MARCH 6-9—Annual meeting American Road Builders' Assn., Netherlands Plaza Hotel, Cincinnati, Ohio.
APRIL 4-8—National Production Exposition, Stevens Hotel, Chicago.
APRIL 25-28—New England Regional Automotive Show, Inc., Mechanics Building, Boston, Mass.
APRIL 26-27—3rd Highway Transportation Congress of National Highway Users Conference, Mayflower Hotel, Washington, D. C.

PREVENTIVE MAINTENANCE

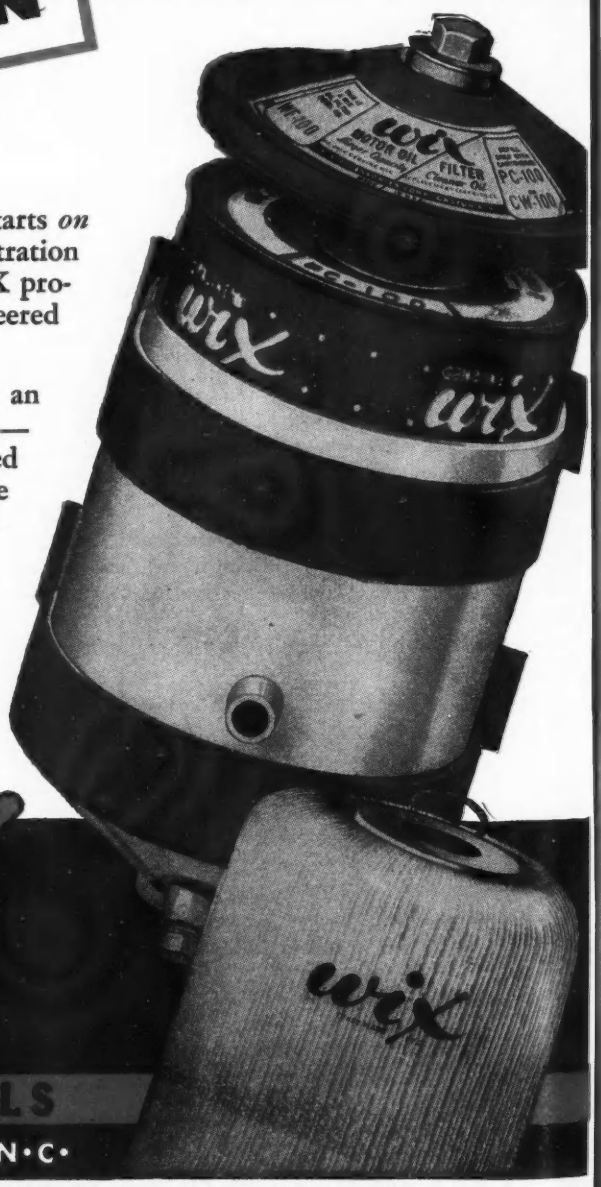
that travels with the truck...

wix

ENGINEERED FILTRATION

Engine trouble doesn't start in your repair shop. It starts *on the road* — and that's where WIX Engineered Filtration works for you! Over the longest, roughest haul, WIX protects engine performance by assuring CLEAN, engineered lubrication.

WIX uses the type of filtering material chosen by an overwhelming 85% of big-time Fleet Operators — selected cotton threads, skillfully blended and processed in the *exclusive* WIX way! These superior threads are precision packed to correct, uniform density under flawless electronic control. No "loose" spots . . . no "dead" spots . . . no channeling—but top filtering action all the way through! That's why WIX gives you money-saving extra hours of efficient oil filtration! Order engine-protecting, oil-preserving WIX Filterefils and high capacity WIX Filters from your Jobber NOW!



wix

TRADE MARK

FILTERS AND FILTEREFILS

WIX ACCESSORIES CORP'N • GASTONIA • N•C•

CANADIAN FACTORY: WIX ACCESSORIES CORP. LTD., 11 Wabash Ave., Toronto 3, Ont.

"Another Great Mohawk Chief"

New MOHAWK SUPER CHIEF TRUCK

This extra-tread, heavy-duty tire is outstanding because it gives extremely long mileage. The vented shoulders of the Super Chief Truck Tire reduce heat, thereby insuring longer wear. Its unique tread design provides better traction and freedom from skidding throughout its many extra miles of service.

Extra-Tread SUPER CHIEF TRUCK tires are available in popular large truck sizes.

THE MOHAWK RUBBER COMPANY

AKRON 5, OHIO

SMOOTHEST DISTANCE BETWEEN TWO POINTS...

THE DELCO LINE

SHOCK ABSORBERS

FOR ALL CARS, TRUCKS, BUSES

RIGHT is the word for the Delco shock absorbers we recommend for your equipment. Delco makes *all* types of shock absorbers—direct acting, double acting cam and lever, single acting and knee action. You get what suits your requirements.

LEFT behind are bottlenecks and delays in deliveries. Delco has the engineering experience to give fast action on design problems . . . the manufacturing facilities to meet your production schedules.

STRAIGHT AHEAD to a smoother ride and lower maintenance costs on the Delco Line! Delco shock absorbers are precision built for uniform performance. And fleet owners get the advantage of nationwide availability of parts and units through United Motors Service.

DELCO PRODUCTS

DIVISION OF GENERAL MOTORS CORPORATION

DAYTON, OHIO

UNITED SERVICE MOTORS

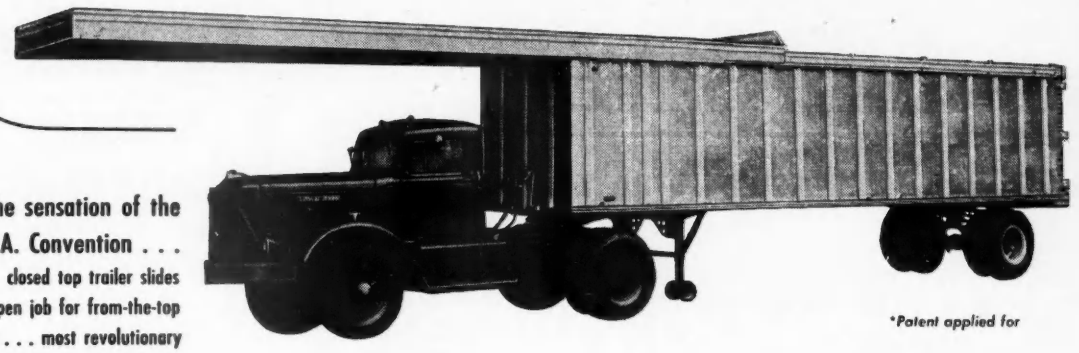
DELCO SHOCK ABSORBERS
A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

Meet Your Shock Needs P. D. Q.
Performance • Design • Quality
Depend on the Delco Line

DELCO HYDRAULIC SHOCK ABSORBERS

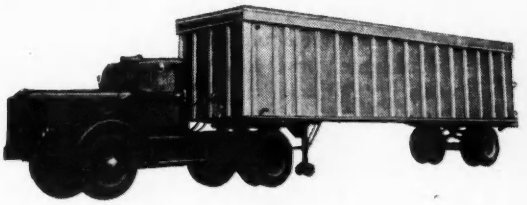
Introducing

THE **Strickroof** *

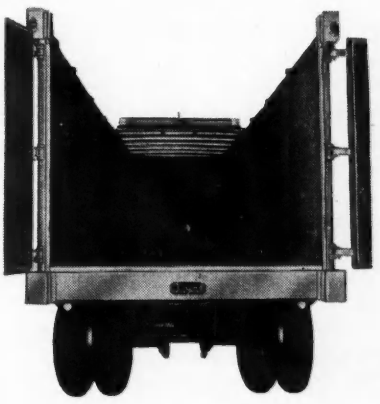


*Patent applied for

The sensation of the A. T. A. Convention . . . closed top trailer slides into open job for from-the-top loading . . . most revolutionary development in the trucking industry in the past 15 years.



1. One man with hand crank opens and closes in 90 seconds.
2. Absolutely water-tight.
3. Sturdy as a closed top trailer.
4. Economical to operate . . . economical to repair.
5. Any Strick trailer you now have can be converted to a Strickroof.



What would the Strickroof mean in your operation?

Buy Strick *and you buy the Best!*

I can use a Strickroof in my operation if it is all you claim. How can I see it in action?

STRICK COMPANY, Dept. A
Whitaker & Godfrey Ave., Phila. 24, Pa.

Name & Title _____

Firm Name _____

Street _____

City _____ Zone _____ State _____

For Information — Write: Strick COMPANY PHILADELPHIA 24, PA.

Detroit Dispatch

by LEONARD WESTRATE
CCJ Detroit News Editor

5 New GM Trucks for 1950

GMC Truck will announce five new models when it introduces its 1950 line next month. It also will offer several weight saving items as optional equipment that have been under test for several years. These will include aluminum engines, axle housings, auxiliary transmission cases, hubs, brake shoes, and wheels, and lightweight bumpers and frames. Use of these lightweight units makes possible a reduction of 2500 lb on 45,000 gvw model, according to the company. The additional models to be offered include one of 11,000 lb gvw with 228 cu in. 96 hp engine, and two new six-wheelers—one of 24,000 lb gvw with 248 cu in. 110 hp engine standard and a 270 cu in. 120 hp power plant optional, and a 32,000 lb gvw job with 360 cu in. engine standard with 426 cu in. engine optional. Also included are two lightweight diesel tractors of 45,000 and 55,000 gvw powered by a 471 cu in. engine developing 133 hp. Another change is that all 400 series models will be reclassed into H series and will have full air brakes available as optional equipment.

Shifting to Transmissions

Although we have reported from time to time that truck engineers are not very encouraging about adoption of automatic transmissions or torque converters on large trucks, experimental work still is continuing. One company has made studies showing that substantial time savings on a long run, especially in hilly terrain, can be affected on large equipment using a torque converter. The reason is that the human element is by-passed in determining proper shifting speeds. The company points out also that a torque converter is much easier on the mechanical elements of the truck and that these generally last longer when the converter is used because of much smoother operation. The added cost on a large truck with a lifetime usage of a million miles or more would be relatively small on a per mile basis, according to the company. However, there still are many problems to be licked, and apparently it will be some time before torque converters will be offered to the fleet operator for large units. It is believed that the first approach will be made in the door-to-door delivery models.

Of Branches and Pools

There is some talk in Detroit that truck manufacturers who do not have factory branches may establish supply pools of trucks at various points throughout the country to take the strain of financing large inventories off dealers. It would apply particularly to the larger, slow-moving models. In effect, it would make available an immediate source of supply for small dealers without requiring them to tie up their capital in extensive inventories.

Ford 4-Speed For F-6

Ford soon may offer a 4-speed synchronized gear transmission on its entire truck line from the F-6 down. The transmission is to be standard on the F-6 model with 254 cu in. 6-cyl engine to be announced soon. The transmission probably would be optional equipment on other models.

More Power to Chevrolet

Chevrolet will announce its new model trucks early next year, probably in January. No details are available, but it is understood that there will be little change in styling. It is a good guess, however, that some engine changes are in the works, since it is known that Chevrolet will have more horsepower under the hood in its 1950 passenger cars and it is very likely that the truck engine will follow the same pattern.

Reo Army Jobs, 7 to 1

It is reported that the compression ratio of the Reo engine to be used in government trucks will be stepped up to 7.0 to 1, increasing performance up to about 145 hp. Several pilot models now are under construction at Reo.

Ohio Ups Weights

The State of Ohio is moving forward in increasing weight limits and is taking the lead in promoting uniform truck sizes and weights in a ten state area. Maximum weights per single axle have been increased to 19,000 lb from 18,000 lb, and to 31,500 lb for each tandem axle group. Maximum gvw also has been increased from 76,500 lb to 78,000 lb. Ohio's governor, Frank J. Lausche, has invited highway directors from Indiana, Michigan, Illinois, Wisconsin, Kentucky, West Virginia, Pennsylvania, Delaware and Maryland to a meeting to discuss uniformity of sizes and weights in the states represented.

You Take the High Road

Representatives of the AAA at their annual meeting in Cleveland recently went on record as urging separate highways for trucks where traffic and economic conditions permit them. The group asked that a joint study be made by AASHO to determine the costs of building and maintaining separate roads for heavy commercial vehicles.

Tire Prices May Jump

Reports from the tire industry indicate another boost in tire prices soon. The recent 3½ per cent increase apparently was only a softening up because manufacturers now say that it was not nearly enough to meet increased costs. With pensions adding materially to production costs and with profit margins extremely narrow for the past year or two, the tire companies probably will not be able to absorb the added cost. The tire people are talking of an increase ranging from another 3½ per cent to as high as 6½ per cent.

What Price?—Old Age

Fleet operators in the Central States area have escaped pension commitments in their new contract recently concluded with organized labor. They did, however, grant welfare benefits approximating $1 per week per employe. The new contract runs for 26 months, expiring Jan. 31, 1952. Wage concessions include an increase of ¼ cent in mileage rates and 8 cents an hour the first year, with an additional ⅛ cent and 5 cents respectively the second year.

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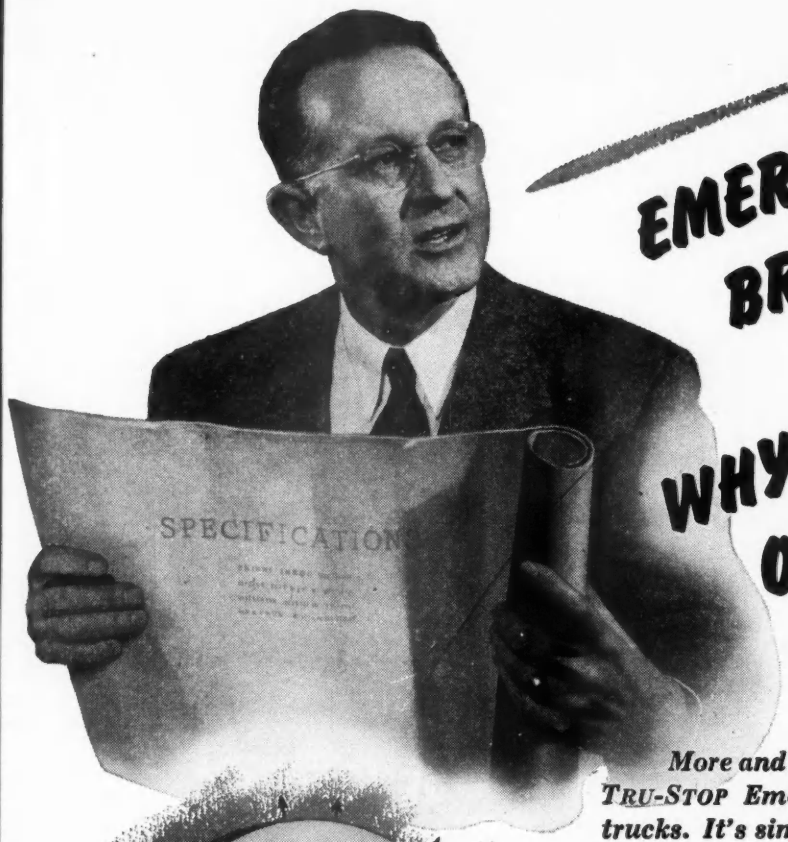
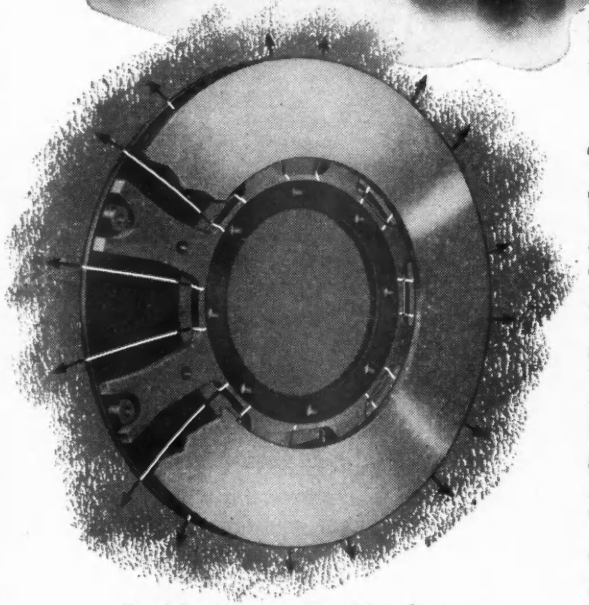


EMERGENCY BRAKES? WHY TRU-STOP OF COURSE!



Double Disc construction forces constant flow of cooling air through the brake. This is one of the reasons for TRU-STOP Brake efficiency and long lining life.

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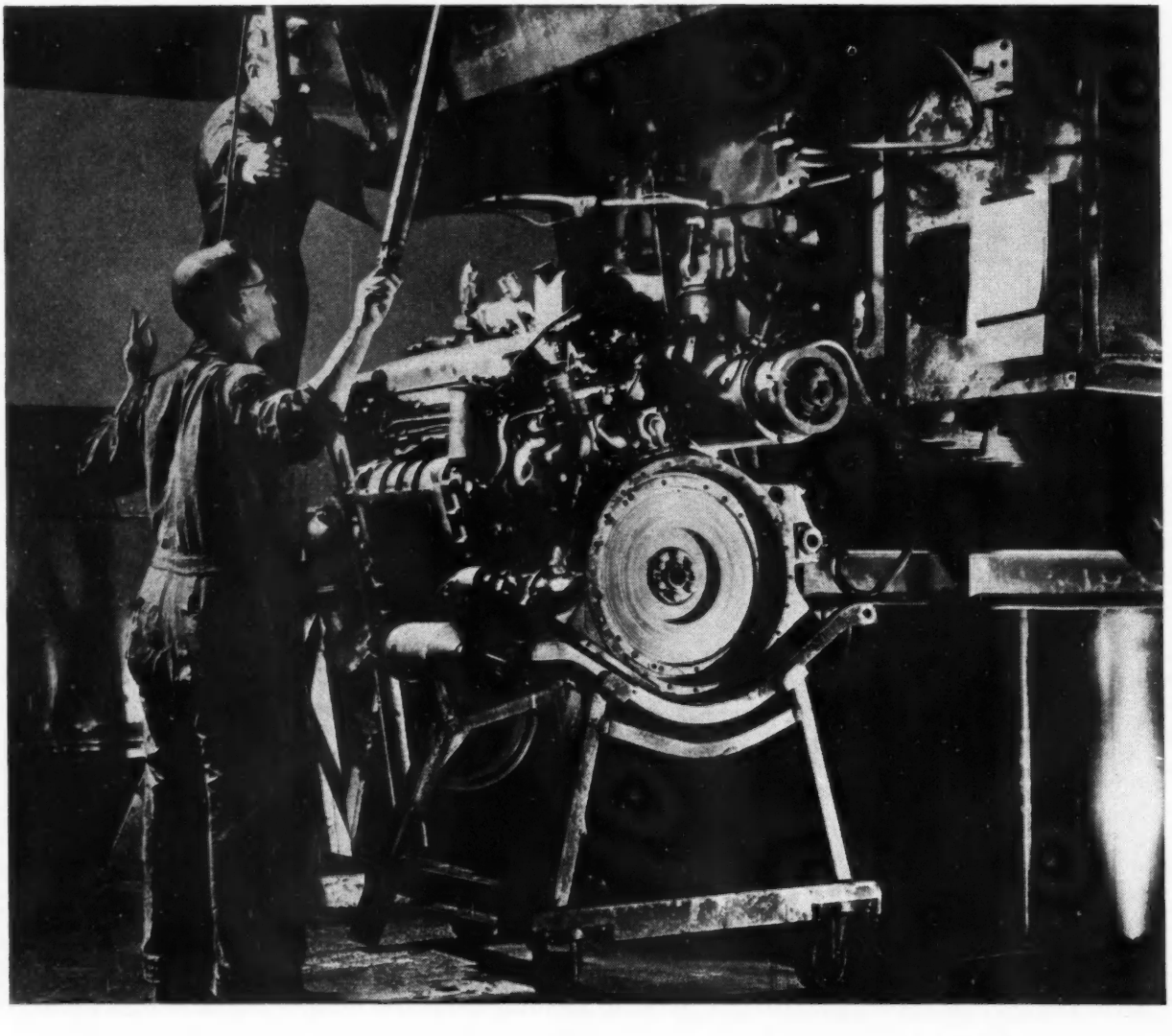

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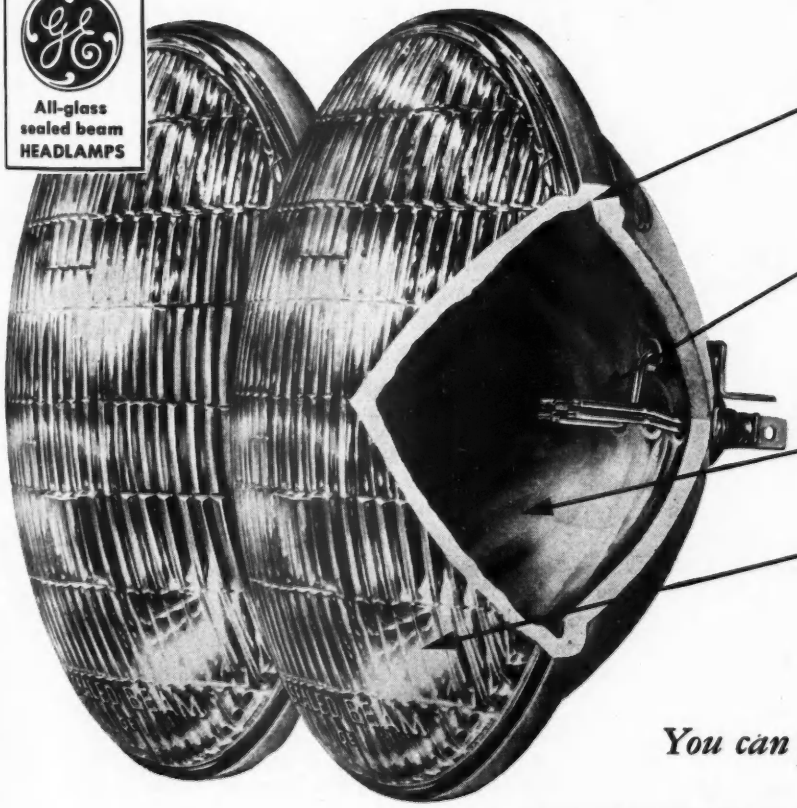

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by GENE HARDY

CCJ Washington Correspondent

Pilot Study Ready

The final report of the Pennsylvania Turnpike pilot study conducted by the Highway Research Board's Committee on Economics of Motor Vehicle Sizes and Weights will be made available at the Board's annual meeting scheduled for mid-December. These tests, it will be remembered, constituted Phase 1 of the overall study and were concerned with cost elements expressed in terms of travel time and fuel consumption for various vehicles with differing loads.

Committee members who have seen the first draft of the report, prepared by Carl Saal, Bureau of Public Roads official who conducted the Pennsylvania study, say that it will be of considerable value to the trucking industry. One quick conclusion that can be drawn, according to these sources is that economy of operation increases substantially with heavier loads.

Transport Tax May Be Repealed

The 3 per cent tax on transportation of property is certain to be repealed at the session of Congress which opens next month probably (? ? ? ?) Recommended by the White House, the repeal move is high on the list of tax "musts" and will only be sidetracked if it is feared that by removing this tax and other excises on non-luxury items the whole tax field will be opened to revenue-losing amendments. Congress will be in no mood to enact legislation which will mean substantial revenue losses in a year when the Federal deficit is estimated at $5.5 billion. That there will be some tax legislation next year appears to be a foregone conclusion, but in an election year Congress will be faced with public pressure for tax reductions, while the Administration looks for increased revenues to offset rising Federal deficits. The outlook is for a little bit of both, reduction in excise levies which directly affect consumer purchasing power and increases in corporation taxes and those on high incomes, as well as tightening up of existing loopholes.

The joint Congressional Tax Committee, which is preparing recommendations for Congress, is working along these lines.

FTC Eyes Tire Discounts

A one-month extension, until Dec. 19, has been granted by the Federal Trade Commission to interested parties desirous of commenting on the Commission's proposed rule which would fix a carload of 20,000 lb as the maximum quantity on replacement tires and tubes upon which differentials in price on account of quantity may be granted. The Commission will entertain proposals for substitute or alternative rules, as well as those expressing opposition to any rule. Public hearings on the proposal will begin on Jan. 9. There has been strong Congressional pressure for the fixing of quantity limits, authorized by the Robinson-Patman Act, ever since the House Small Business Committee conducted hearings on the subject more than a year ago. As a result of these hearings, FTC conducted an investigation which found that in 1947 there was a maximum price differential of 38.5 per cent between the smallest and largest purchasers of truck tires. For passenger car tires, this figure was 30.5 per cent. Of 50,000 purchasers involved, FTC found that only two qualified for the maximum discounts.

Government Replaces at 60,000

Officials of the Bureau of the Budget are preparing a table of replacement standards for commercial motor vehicles (1½ tons and larger) operated by the civilian agencies of the Federal Government.

A replacement standard of 60,000 miles or 6 years has already been placed in effect for passenger cars and another of 50,000 miles or 6 years has been promulgated for trucks with a capacity of 1½ tons or less. Experience with these standards has proved satisfactory. Primary object of the preparation of such standards is to assure proper replacement of government vehicles on some uniform pattern, so that the government fleet will be maintained with a high degree of mechanicl and operational efficiency.

Transport Department Proposed

Creation of a Federal Department of Transportation and a new Transport Regulatory Commission are the principal recommendations of a study by the Brookings Institution entitled, "National Transportation Policy." The first of these new agencies would be headed by a cabinet officer and would assume all the major functions of the Bureau of Public Roads, CAA, the Maritime Commission, the policy functions of the Corps of Engineers, and all operating functions for air, rail, and motor transport now performed by the independent regulatory agencies. The Coast Guard and the Coast and Geodetic Survey would also be included. All regulatory authority of the ICC, CAB, and Maritime Commission would be coordinated in the new independent Transport Regulatory Commission.

Conclusions and recommendations of the study are as follows:

1. Private management has aggravated the problem through ill-advised expansion, failure to achieve maximum economy, and lack of alertness to the possibilities of the newer forms of transportation. Local communities and other groups have multiplied these difficulties by resisting abandonment of obsolete plant and service.

2. Management should have restored to it a larger measure of discretion in determining rate levels.

3. Unnecessary subsidies should be eliminated. Outlays for highways, water-

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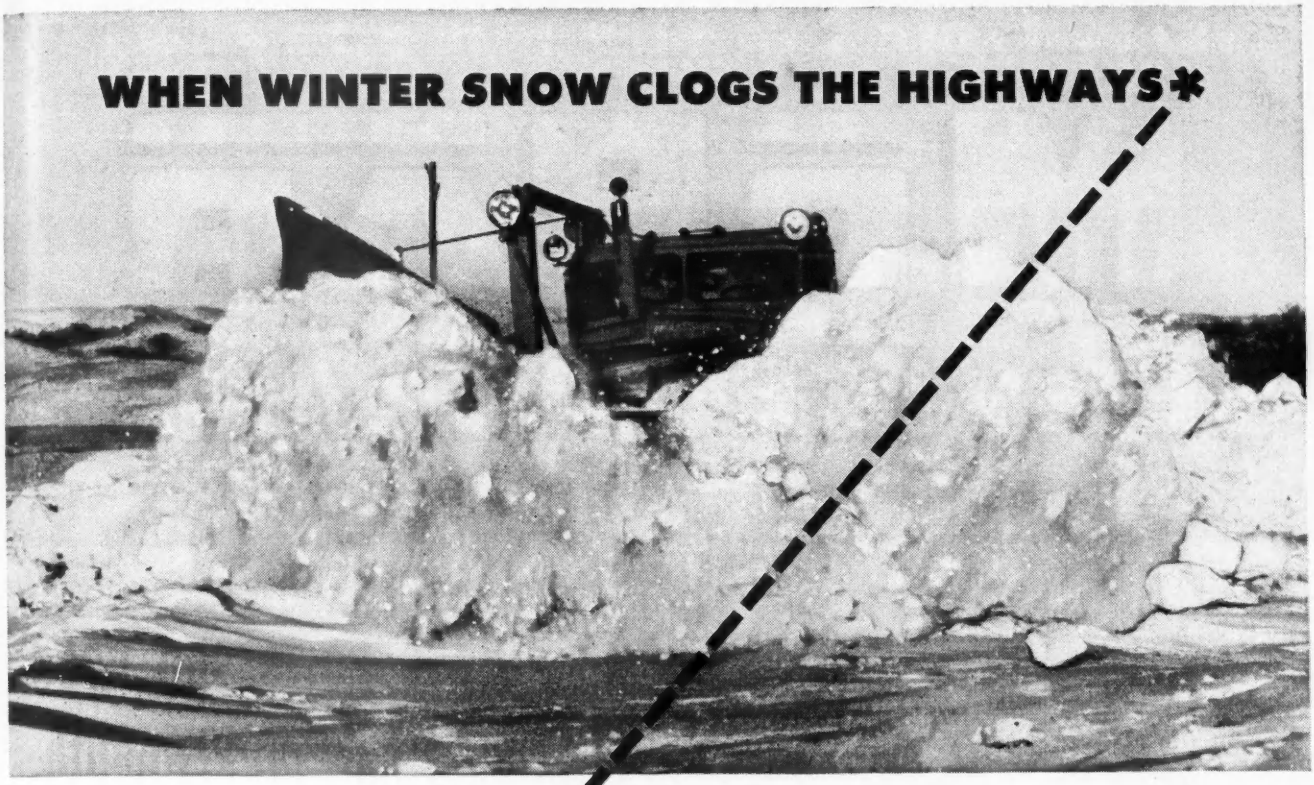

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Then, with equal efficiency, OSHKOSH shifts over to on-and-off the highway hauling, maintenance, construction, and other necessary jobs. They pay their way every month of the year.

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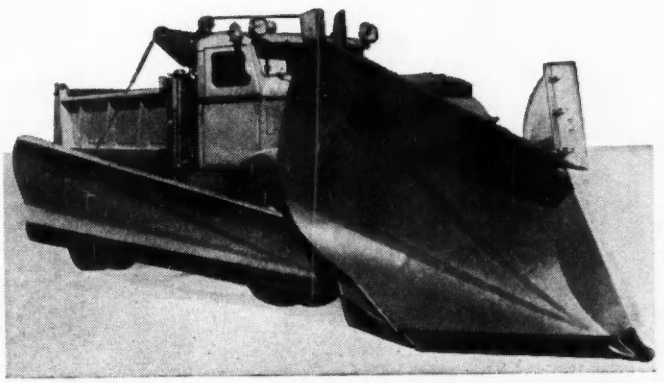

OSHKOSH Model W-2206 4-wheel drive truck with snow removal equipment.

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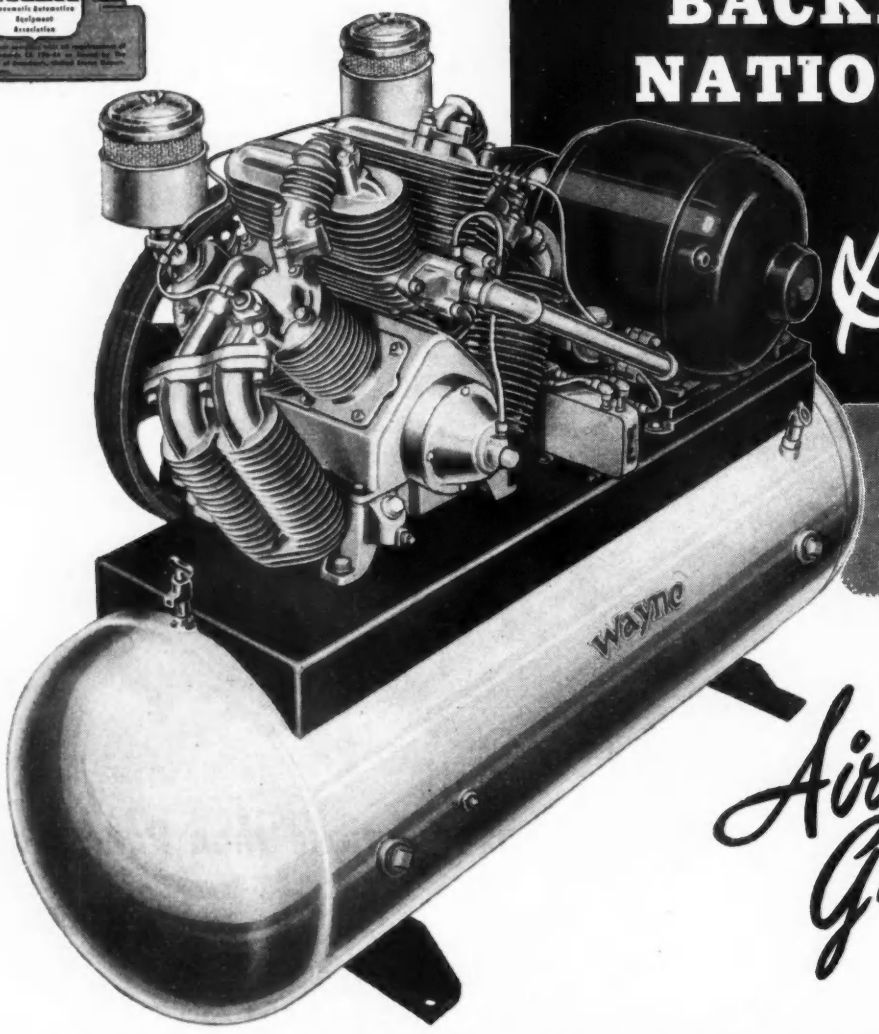

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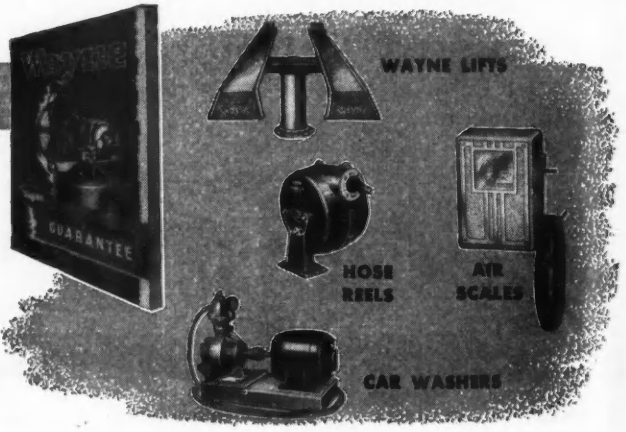

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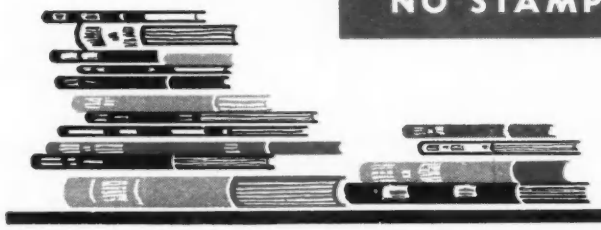

A selected list of the latest literature— catalogs, pamphlets, charts — chosen to help fleetmen improve operation and maintenance

L2. Cooling System

This 16-page manual on vehicle cooling systems covers a wide range of subjects from service to common types of failures such as deposits and corrosion. It will serve to provide background for improved care, better cleaning methods and an understanding of the importance of the cooling system in efficient vehicle performance.

L6. Clutch Troubles

Clutch troubles and their cures is the subject of this handy reference book. Twelve pages cover causes and cures of such troubles as dragging, grabbing, slipping, chattering, squeaking, rattling and failure to transmit power. Another section on misalignment is well worth careful study.

L10. Tire Maintenance

Information outlined in this 76-page booklet will assist in the selection as well as service of truck and bus tires. Featuring information on application analysis, facts on tire changeovers, rim data and load distribution, the booklet employs full page charts to show the effect of overloading, speed, overinflation, temperature on tire life.

L14. Piston Data

Here is information designed to help mechanics improve piston life. With illustrations and easily-read text the author provides pointers on piston and pin fitting, finishing the pistons and piston design. This data will be valuable in securing better fits, longer life and the resulting improved engine performance.

L18. Lubrication Guide

Prepared as an aid to prolonging engine life this 92-page booklet covers a wide variety of lubrication practices. The author shows how foreign particles and dilution increase wear. He discusses the care of the ignition system. valves and fuel system as well as the clutch, brakes, steering, recommending lubricating practices and service tips with nearly every phase of PM.

L19. Diesel Engine Book

Fundamentals of diesel engines are covered in this outstanding booklet prepared by an engineer to help fleetmen understand diesel operation and design. Containing 64 pages with illustrations this booklet goes into the history of the engine, the various combustion systems, fuel injectors, control mechanisms and many other phases of this type engine.

L23. Automative Refinishes

Refinishing methods and color mixing of finishes is the general subject matter of this publication. Detailed information is provided on application, priming, sanding, edging, thinning lacquers and straining enamels. One section lists 50 common failures in lacquer application, with remedies given for each.

L25. Paint Spray Handbook

Here is a booklet that will help you determine the type of paint spraying equipment you need. This 24-page, pocket-sized publication gives worthwhile tips on selecting and servicing sprayers, compressors, guns and nozzles. Trouble shooting steps for air compressors and spray guns are also listed.

L26. Ignition Coil

This ignition coil booklet in 24 illustrated pages covers various phases of design, service and troubleshooting. Other valuable tips on ignition service are discussed.

L34. Welder's Booklet

This 56-page handbook provides valuable tips for welding and cutting with oxy-acetylene equipment, outlining procedures and precautions which are essential to safe and satisfactory operation. These instructions should be read by every welder.

L35. Brake Service Manual

Complete details on adjusting, relining and troubleshooting the most popular makes and models of both hydraulic and air brakes constitute the subject matter of this 52-page manual. Detailed drawings and easily-read charts make this manual a must for brake service.

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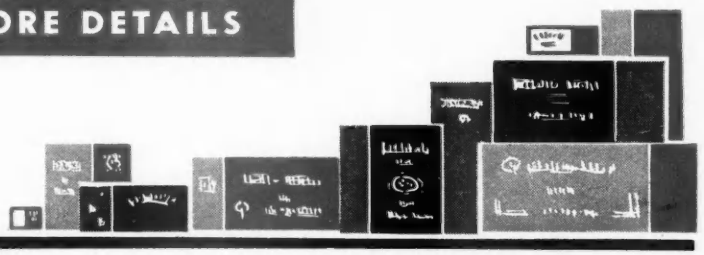


Illustrating and reviewing briefly many of the newest developments in parts, accessories, shop equipment and tools. For more information mail free postcard

P166. Flashing Stop Light

A giant armored flashing stop light made of heavy steel plate enclosing a reflecting lens flashes its warning 60 times a second when brake pressure is applied. By means of a dash switch

this heavy-duty light can be kept flashing when vehicle is stopped. The unit is 12 in. long by 3 in. high and ruggedly built. Trippe Mfg. Co., Chicago, Ill.

P167. Truck Heater

A new line of Elston truck heaters, measure only 8 in. wide, 8¼ in deep and 7½ in. high. Flush mounting back design, together with the hold drilling templates furnished permits one man installation in limited time.

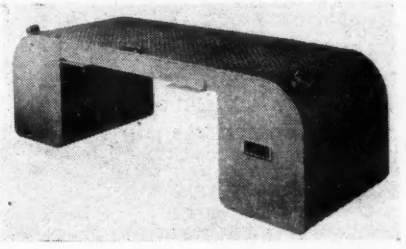
The heater employs a full 3 in. thick square core protected by a grille to prevent damage from tools, etc. Core is mounted horizontally at the bottom of the unit to assure maximum flow of water at low speeds. Highway Safety Appliances, Inc., St. Paul, Minn.

P168. Valve Tappet Spacer

The Kwik-Way Micro-Spacer eliminates guesswork in obtaining correct valve tappet clearance by predetermining the amount to be removed from the end of the valve stem. Equipped with a large indicator (2¼ in.) the tool will accommodate a large range of valve sizes both as to stem diameter and length. A cone shaped receiver inside the device accurately centers valve stems up to 5/8 in. diameter. Standard equipment includes either the 45 or 30 deg. adjusting sleeve. Cedar Rapids Engineering Co., Cedar Rapids, Iowa.

P169. Safety Fuel Tanks

The new line of Cutler safety fuel tanks is highly crash-resistant, non-explosive in case of fire, and spill-



proof in any upset. Available in saddle and cylinder models, the new tanks minimize fire hazard, offer protection for the driver, the load, and the outfit.

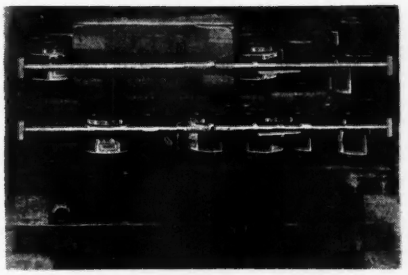
Constructed of 12-gage steel, hot-rolled, pickled and oiled, they are designed to fold up or "give" in case of crash. A ball check valve makes tanks spill-proof in any position in case of upset, and prevents seepage from tank when filled.

All tanks are equipped with a screen to prevent siphoning, and are arc-welded throughout. Tanks are equipped with solid brass chained filler caps and measuring rods on both sides, and with extra heavy pipe filler necks positioned to allow ease of filling. Fully dished tank heads are included.

They are available in 75, 105, and 125-gallon capacities. Cutler Metal Products Co., Camden, N. J.

P170. Cargo Holder

A new cargo holder designed for use in all types of closed-body trucks and trailers locks the load in place and prevents shifting or falling. It can be applied to any load quickly and easily

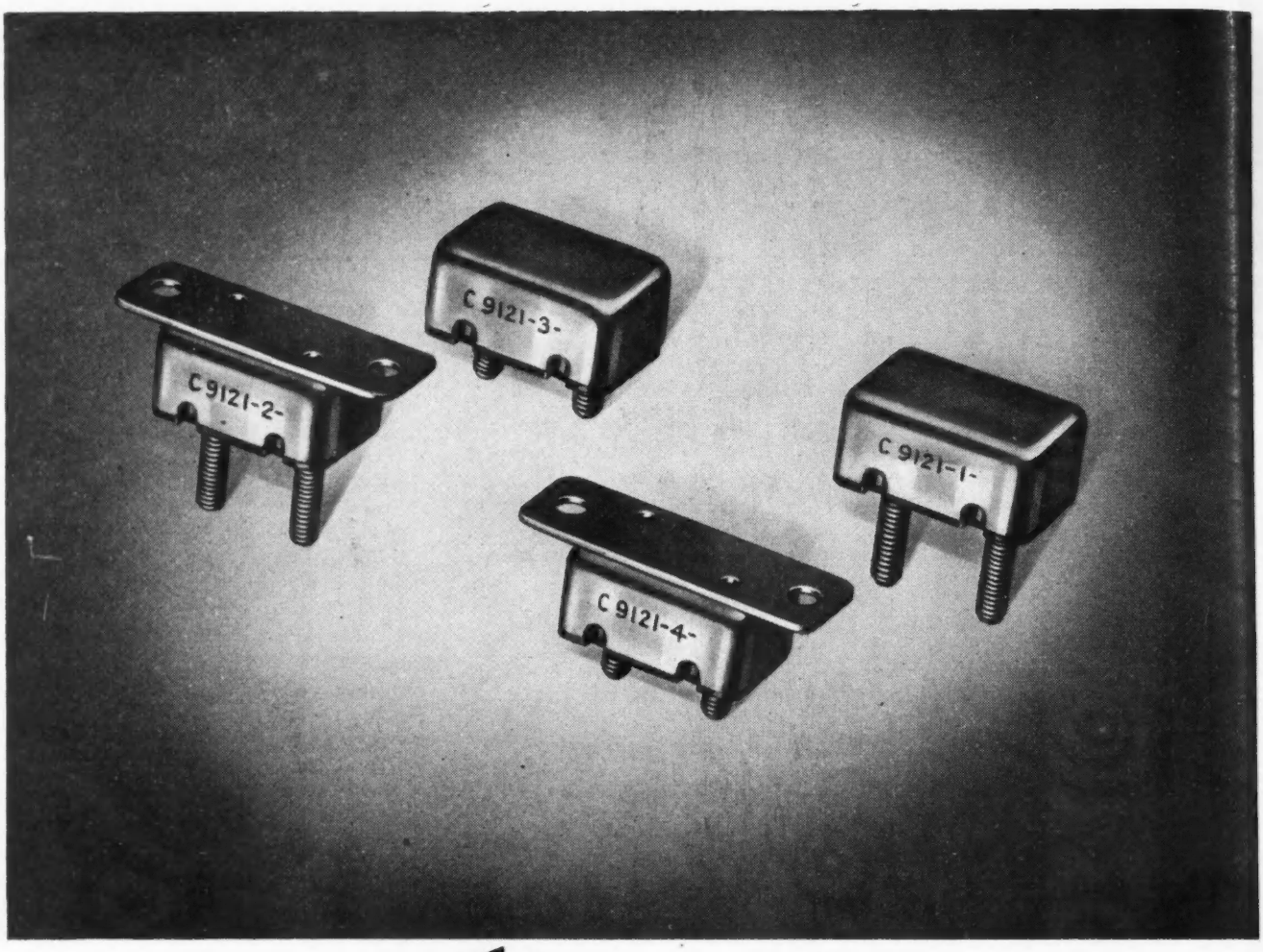


by means of an expansion locking handle and positive spring lock. The rubber "feet" grip the side walls securely. yet without injury to any type of interior lining used in closed body construction. Jordan Equipment Co., Oakland, Cal.

P171. Hydraulic Jack

This hydraulic service jack also functions as a transmission jack. Known by the name "Step-Draulic," the jack is of 1½-ton capacity and of all-steel construction. Weighing only 58 lb, it

(TURN TO PAGE 54, PLEASE)



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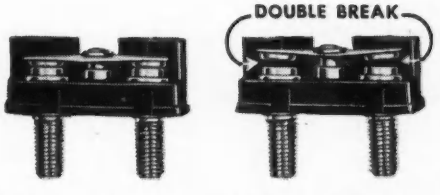
Protect all electrical circuits with Klixon C-9121 Circuit Breakers. Use it in trucks, busses, tractors, boats, personal aircraft, etc. Write for complete details and sample.

HERE'S HOW IT OPERATES



Breaker remains closed and maintains circuit on normal load.

Click...It opens on overload, preventing damage to circuits and equipment.

KLIXON

TRADE MARK REG. U. S. PAT. OFF.

SPENCER THERMOSTAT

Division of Metals & Controls Corp.

1612 FOREST STREET, ATTLEBORO, MASS.

DRAMATIC PROOF

THAT BLACKHAWK JACKS ARE

YOUR BEST BUY

FOR 19 YEARS STRAIGHT

The Vast Majority of "Maintenance Efficiency" Winners Used Blackhawk Jacks

Again, in 1949, Blackhawk Jacks are the top choice among the majority of shops winning "Bus Transportation's" famous "M-E" awards for maintenance efficiency! Proof, again, that you get *all* the jack you pay for when you buy a Blackhawk . . . *they're that much better!*

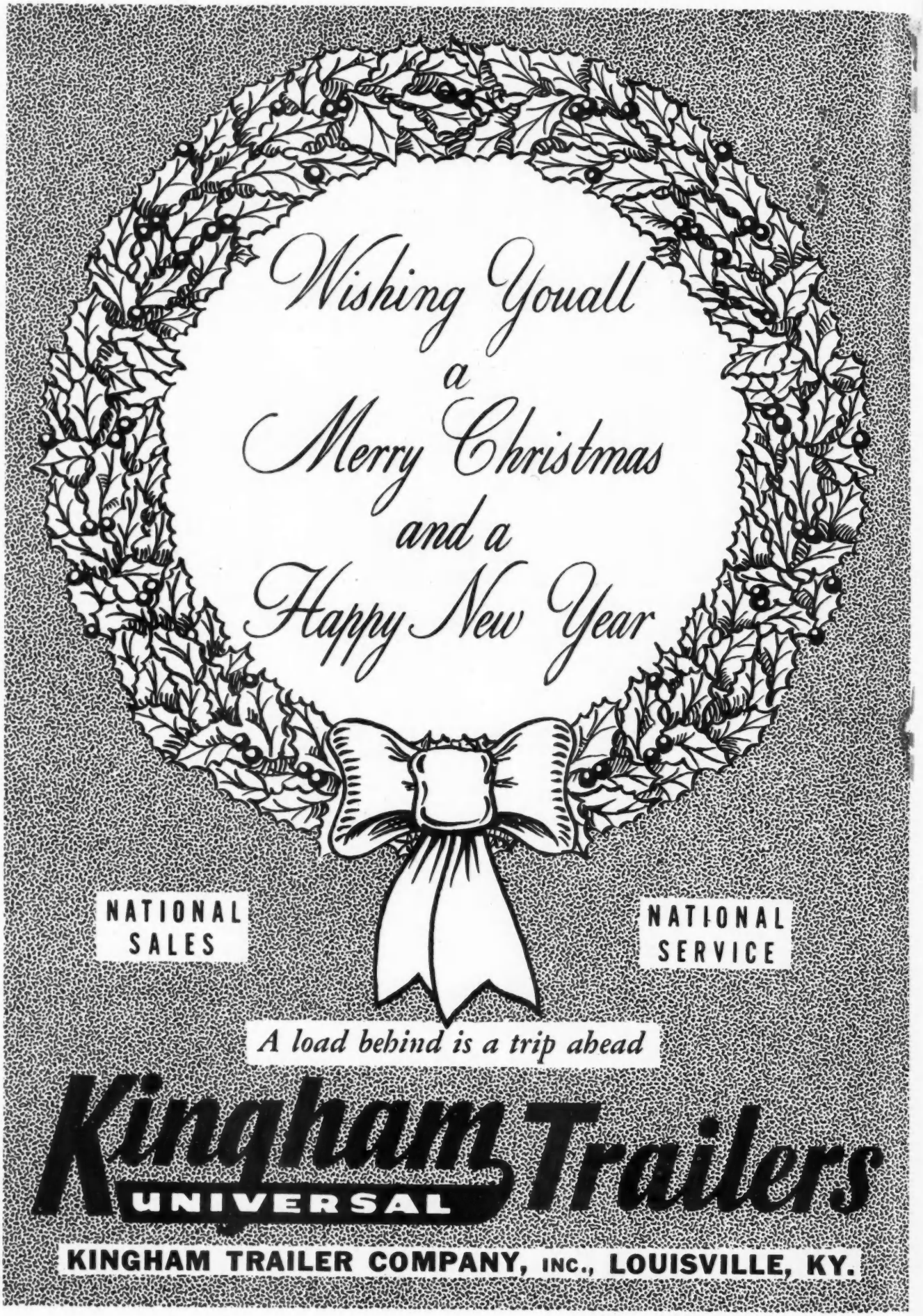
A policy of buying the *best* equipment is a big step toward such efficiency in *any* fleet. Take the tip . . . buy Blackhawks from your jobber.

BLACKHAWK MFG. CO., Milwaukee 1, Wis.

Yes, the "Maintenance Efficiency" awards are one more big reason why Blackhawk Jacks rightfully carry this "Service Proved" Seal.

BLACKHAWK®

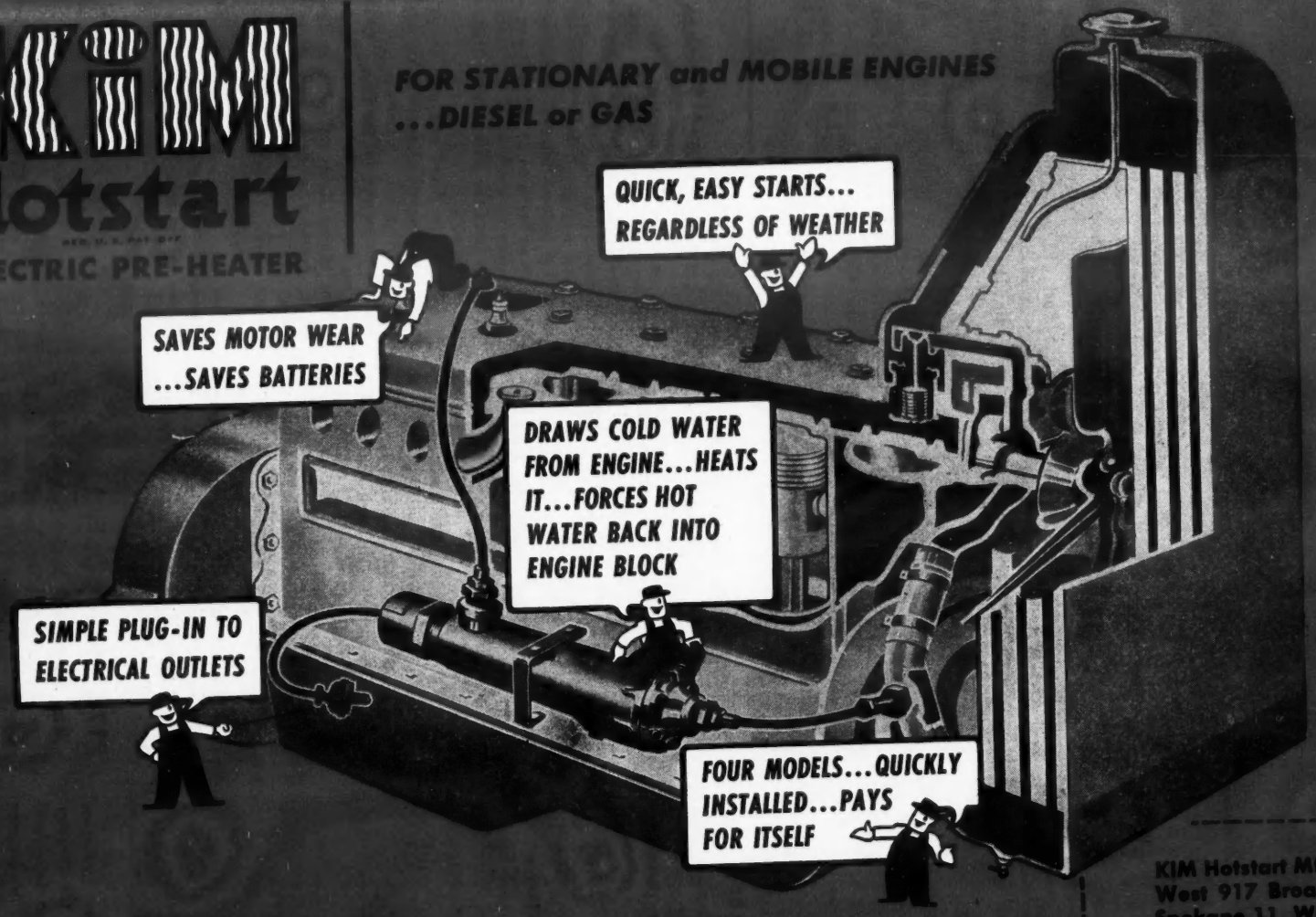
HYDRAULIC JACKS • WRENCHES • "RECK-RACK" • "PORTO-POWER"


Wishing Youall
a
Merry Christmas
and a
Happy New Year
NATIONAL SALES
NATIONAL SERVICE
A load behind is a trip ahead
Kingham UNIVERSAL Trailers
KINGHAM TRAILER COMPANY, INC., LOUISVILLE, KY.

KIM Hotstart

ELECTRIC PRE-HEATER

FOR STATIONARY and MOBILE ENGINES
...DIESEL or GAS


QUICK, EASY STARTS... REGARDLESS OF WEATHER
SAVES MOTOR WEAR ...SAVES BATTERIES
DRAWS COLD WATER FROM ENGINE...HEATS IT...FORCES HOT WATER BACK INTO ENGINE BLOCK
SIMPLE PLUG-IN TO ELECTRICAL OUTLETS
FOUR MODELS...QUICKLY INSTALLED...PAYS FOR ITSELF

THE BIGGEST LITTLE INVESTMENT THAT MONEY CAN MAKE!

FOR USE ON —
FLEET TRUCKS
BUS SYSTEMS
PASSENGER CARS
CRANES, TRACTORS
FARM MACHINERY
DIESEL LOCOMOTIVES
MINING EQUIPMENT
LUMBER, LOGGING
ROAD EQUIPMENT

Patented and Manufactured by KIM HOTSTART MFG. CO., West 917 Broadway, Spokane 11, Washington

CLIP COUPON AND MAIL

KIM Hotstart Mfg. Co.
West 917 Broadway,
Spokane 11, Wn.

Please send literature, prices and name of local dealer.

Name_____

Company_____

Street City Zone State

NEW PRODUCTS

USE FREE POSTCARD FOR MORE DETAILS

Continued from Page 49

has been tested to 6 tons. The foot or hand operated hydraulic pump and the release valve are in one unit, connected to lift cylinder with flexible high pressure hose, and will operate in or out of handle up to 5 ft from saddle.

When fitted with a universal carrier and adapter, it is suited to transmission work. Its removable, non-slip saddle lifts from 4½ in. to 19½ in. J. O. Stephenson Foundry and Mfg. Co., Detroit, Mich.

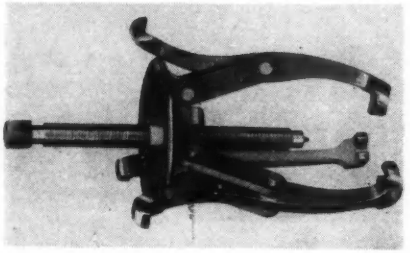
P172. Fast Charger

The Thermaster fast charger weighs only 31 lb, and has a 100-ampere output and fully automatic thermostatic control. Capacity of the equipment is one 6-volt battery at the fast charge rate, or six 6-volt batteries, or their equivalent, at the slow charge rate. Power may be obtained from any standard a.c. outlet. Charger features a heavy-duty transformer, forced air cooling, a selenium rectifier. A specially

designed manual-reset type contactor shuts off the charger when the thermostatic contacts open and on fixed coil type ammeter with a 0-100 ampere range shows charging current accurately and easily. Willard Storage Battery Co., Cleveland, Ohio.

P173. Gear Puller

A new line of convertible pullers, drop forged, heat treated and finished in chrome feature quick conversion to



a 3-arm or 2-arm assembly as desired. The use of ball-detent locking pins in the linkage eliminates the necessity of using wrenches for disassembly or reassembly as in the case of bolted assemblies. Bonney Forge Tool Works, Allentown, Penna.

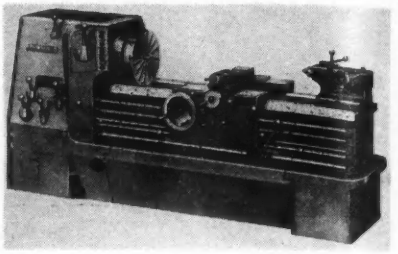
P174. Compression Tester

The new Weidenhoff Model 1104 compression tester eliminates adapters, hose extensions and other accessories, being equipped with a full-swivel handle allowing maximum flexibility. Handle can be swung through full circle to most convenient position. The tester is said to be especially useful for the hard-to-get-at cylinders. Gage reads in 5-lb steps up to 200 lb. Check and release valves have minimum restriction allowing accurate diagnosis of cylinder conditions and highest reading on three or four piston strokes. Joseph Weidenhoff, Inc., Chicago, Ill.

P175. Heavy-Duty Lathe

The Springfield Model S heavy-duty lathe features rigidity, broad feed and speed ranges for all types of work, convenience for operation, and lubrication facilities and design features to minimize wear and maintenance.

A heavy spindle with 24 speeds is mounted on three heavy-duty bearings. A bearing at the middle of the spindle adds rigidity. Ball or roller type spindle bearings are optional. The hole



through the spindle can be slightly in excess of 2 in. when required. The heavy hardened and ground gears give a speed range of 15 to 1000 rpm, and higher or lower ranges can be furnished. A multiple disc, wet type combination clutch and brake running in a bath of oil controls the spindle. Lubrication for all bearings and gears in the head is carried in an oil sump in the cabinet leg, and an automatic pump floods the entire mechanism. The combination of quadrant gearing and the 60 feed and thread gear box provides a quick change over from standard operations to metric, module and diametral pitch set-ups. The Springfield Machine Tool Co., Springfield, Ohio.

Late Product Flashes

A new non-skid, non-slip safety tread flooring material called Perma-Tread, announced by the **Mold-Cast Alloy Corp.**, Indianapolis, Ind.

A new engine oil heat exchanger and filter that reduces internal operating temperature as much as 20 per cent and fluid temperature as much as 15 per cent, now available from the **Filcoolator Mfg. Co.**, Los Angeles.

A protective hand and arm cream for shop use, designed to protect skin against paint, printing ink, lacquers, grease, grime and oil, announced by the **Chase Chemical Co.**, Cleveland, Ohio.

New timing light molded of neoprene which provides a firm, easy grip and allows the light to be held close to the timing mark. **Auto-Test, Inc.**, Chicago, Ill.

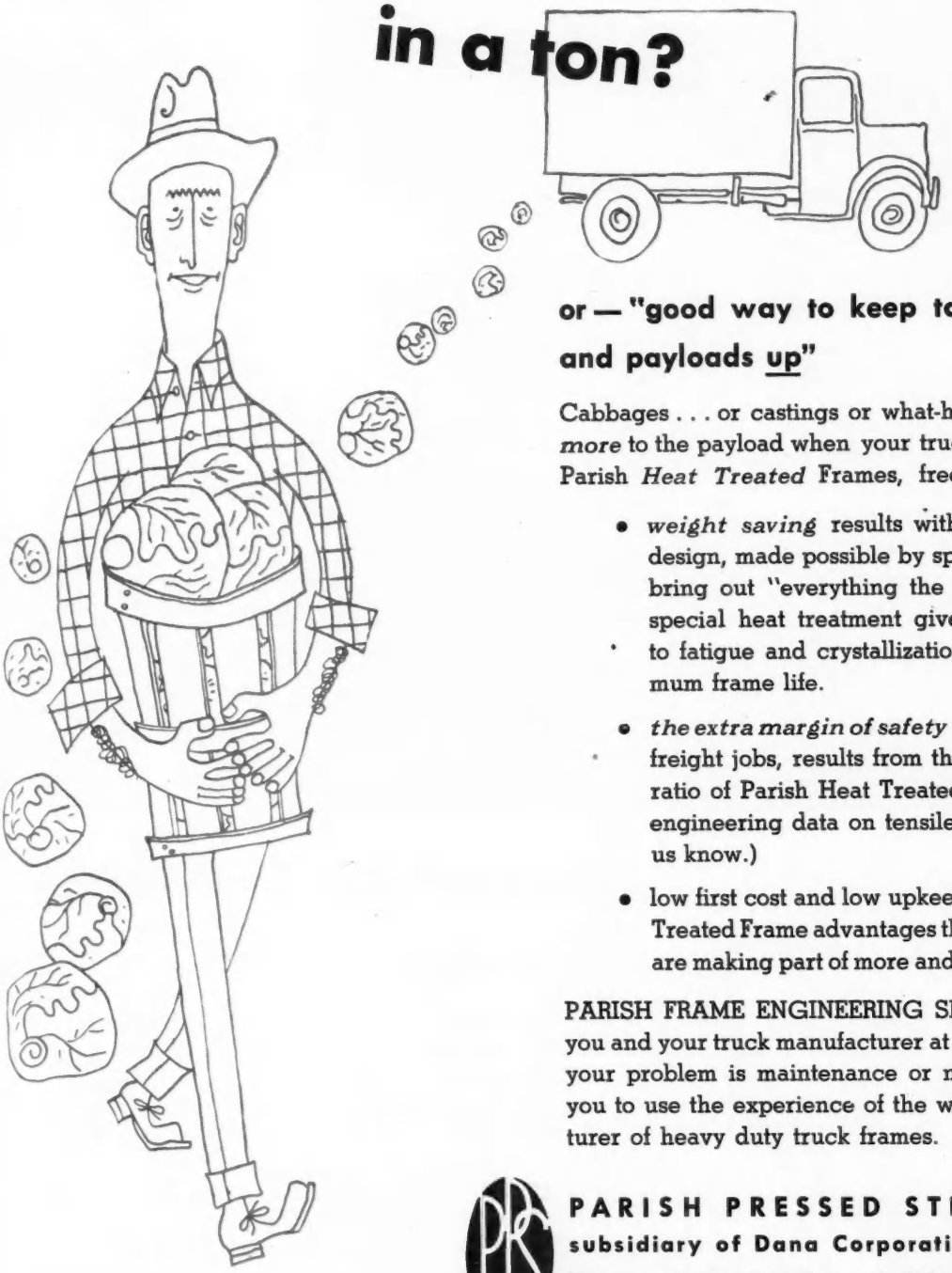
Two new lacquer primer surfacers, Glamourtone Blue, a soft powder blue and Glamourtone Green, a light olive green, introduced by **The Arco Co.**, Cleveland, Ohio.

A new general purpose midget plier designed for use in getting at the hundreds of small, awkwardly placed nuts on motor, distributor, generator, magneto, dash panel, radio. **Herbrand Div. of the Bingham-Herbrand Corp.**, Fremont, Ohio.

New No. P-14 Draw-Thru punch set, a

(TURN TO PAGE 142, PLEASE)

HOW MANY CABBAGES in a ton?



or — "good way to keep tare weight down and payloads up"

Cabbages . . . or castings or what-have-you . . . can count *more* to the payload when your trucks are equipped with Parish *Heat Treated* Frames, free from dead weight—

- *weight saving* results with thin-section side rail design, made possible by special heat treatment to bring out "everything the steel has got." Parish special heat treatment gives the steel resistance to fatigue and crystallization, which means maximum frame life.
- *the extra margin of safety* you get, even on mixed freight jobs, results from the high strength-weight ratio of Parish Heat Treated Frames. (If you want engineering data on tensiles and elastic limits, let us know.)
- low first cost and low upkeep costs are Parish Heat Treated Frame advantages that truck manufacturers are making part of more and more heavy duty units.

PARISH FRAME ENGINEERING SERVICE is available to you and your truck manufacturer at no obligation. Whether your problem is maintenance or new design, it will pay you to use the experience of the world's largest manufacturer of heavy duty truck frames.

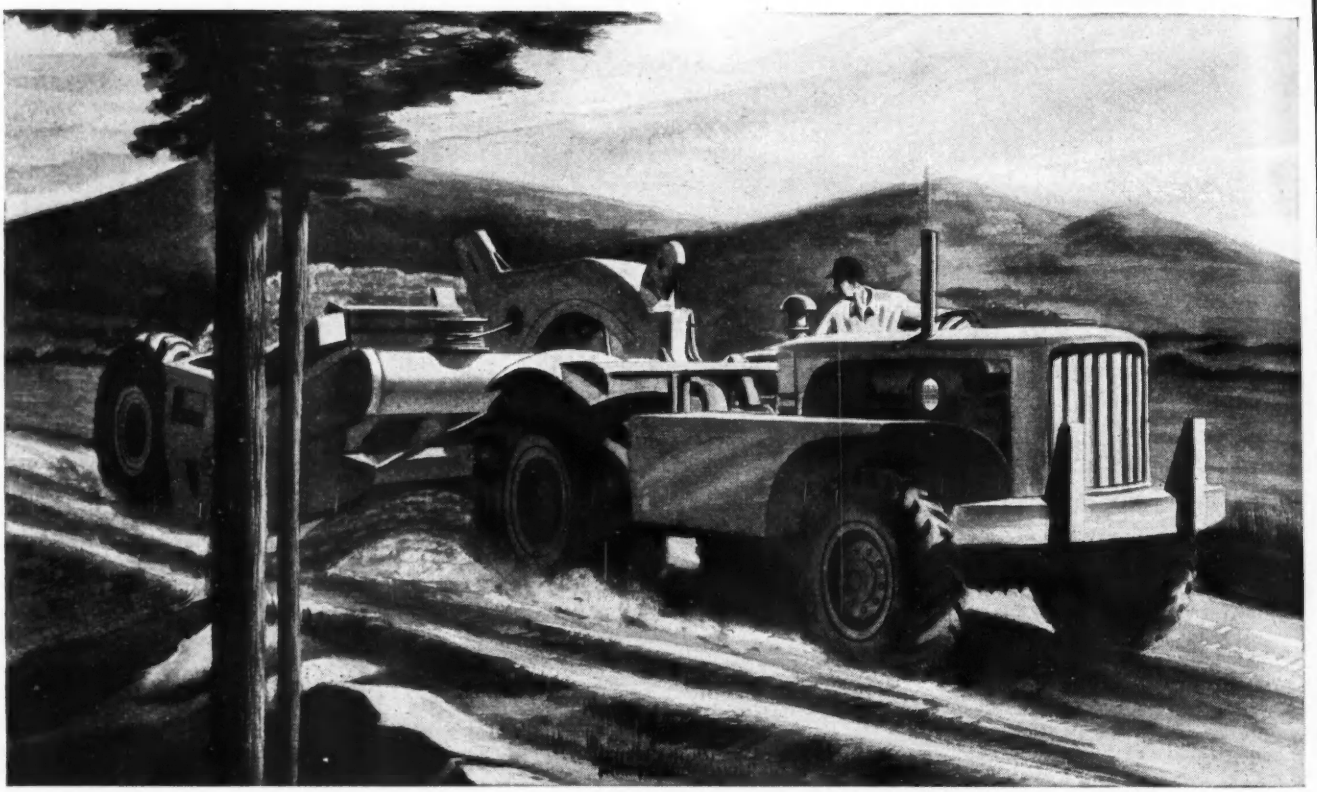
PARISH PRESSED STEEL COMPANY
subsidiary of Dana Corporation READING, PA.

Western Representative: **F. SOMERS PETERSON CO.**
524 Folsom St., San Francisco, Cal.
413 East 12th St., Los Angeles, Cal.

ONLY PARISH STEEL

HEAT TREATED HEAVY DUTY FRAMES GIVE YOU THE STRENGTH OF STEEL *at no sacrifice of payload!*

WHEN THE JOB IS *Tough*



ROSS BRINGS EASE . . . AND ECONOMY

HERE's an unusually difficult job of steering . . . but Ross handles it, as always, with ease, safety and economy . . . Whatever the steering problem, under any condition of road, load, or weather, Ross performs to your complete satisfaction.

The Ross policy of incorporating advancements in design as they are proved by exhaustive tests has resulted in many recent improvements. Current Ross models have:

(1) *Increased mechanical reduction* . . . (2) *More compactness* . . . (3) *Reduction in weight* . . . (4) *Greater arm angular-travel* . . . (5) *Improved metallurgy* . . . (6) *Increased efficiency.*

Throughout 42 years of leadership in this industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of safety, stability and performance. We invite discussion of any steering problem.

Ross

Cam & Lever **STEERING**

ROSS GEAR AND TOOL COMPANY • LAFAYETTE, INDIANA

Valvoline Motor Oil protects in the

. . . cuts repairs and overhauls

Most unnecessary wear takes place in the *Danger Zone*—that last few hundred miles before the drain. Some apparently good oils break down, thin out, lose their cleaning action.

You can't detect these weaknesses by the "look" or "feel" of an oil. But Valvoline gives you 6-way proof of *complete* lubrication—right up to the *last mile* of any normal drain period.

VALVOLINE's 6-Point Proof of Quality

1. Made from world's finest crude—100% Pennsylvania.

2. Selective Extraction removes the few impurities—leaves *all* the natural lubricating factors in the finished oil.

3. Cleanest type oil known. Additives protect against *outside* contamination.

4. Highest Viscosity Index—best protection against thinning at engine temperatures.

5. Passes every test with honors—in the laboratory—on trial runs—in actual use.

6. World's longest record of customer satisfaction—America's first Pennsylvania Oil.

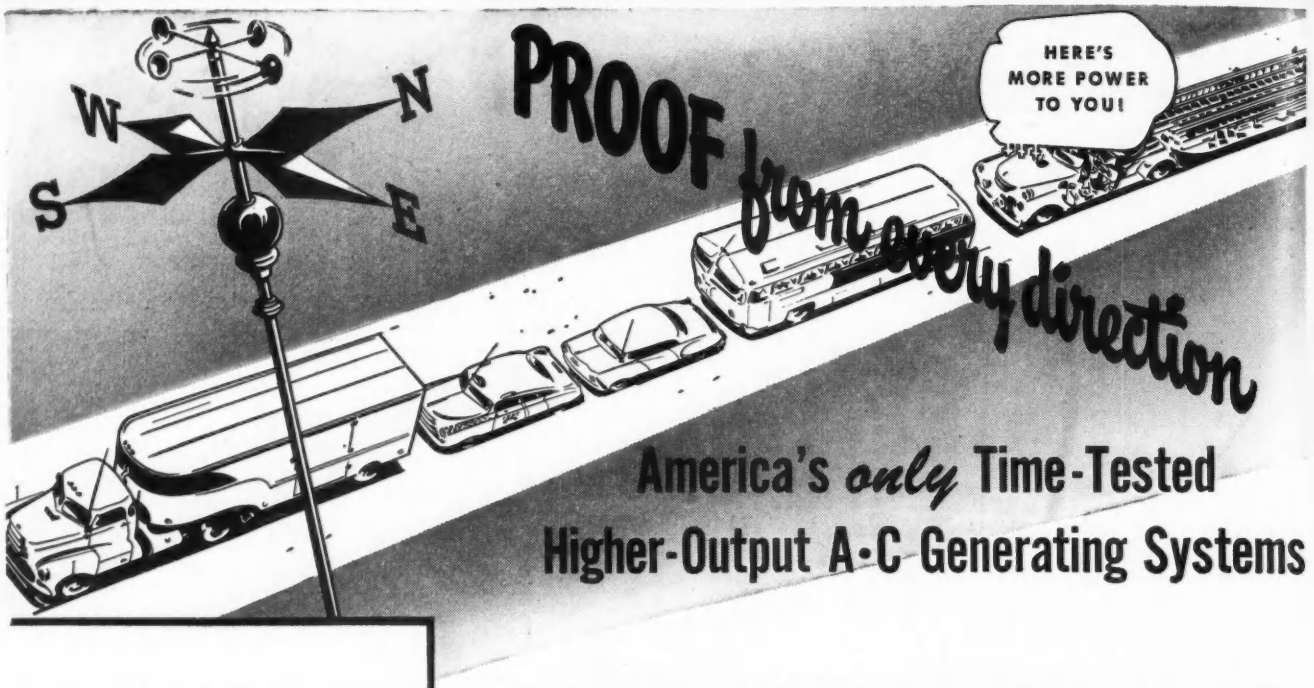
FREE to Valvoline Users
Valuable Laboratory Service

Crankcase drainings analyzed—with suggestions on correcting mechanical and operating conditions of your units—for greater oil economy and engine safety.

ASK YOUR VALVOLINE MAN

VALVOLINE
100% Pennsylvania
MOTOR OIL

FREEDOM VALVOLINE OIL COMPANY
Freedom, Pennsylvania



PROOF from every direction

America's *only* Time-Tested Higher-Output A-C Generating Systems

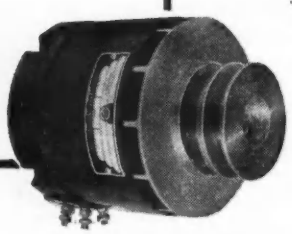
Advantages demonstrated in over 3 years of road service!

- **Alternator systems can provide 50 amperes (or more) with engine idling and full output at all driving speeds to keep batteries fully charged while supporting the unlimited use of accessories.**
- **Weigh 60% less than D-C equipment of comparable rating.**
- **Require less space and less support.**
- **Require less maintenance and operate with less danger of burnout because Alternator has no commutator with commutating brushes or no rotating armature windings to cause sparking.**
- **Eliminate radio "fade out" and range reduction caused by weak batteries—hold radio noise level to an absolute minimum and prolong life of radio equipment.**

KEEP BATTERIES UP —COSTS DOWN

SUPPORT MORE ACCESSORIES!

HAVE a high electrical load normally? Build up really excessive loads when accessories are used with engine at slow or idling speed? Whatever may be creating *your* generating problem, chances are there is a Leece-Neville A-C Generating System that will provide more than enough current to keep your batteries fully charged at all times. The experience of users everywhere since these amazing A-C systems were introduced by Leece-Neville over three years ago offers a world of evidence that they keep batteries up—keep costs down—support more accessories. For all the facts see your nearest Leece-Neville Service Station or write *The Leece-Neville Company, Cleveland 14, Ohio.*



THIS ALTERNATOR is the heart of the popular Leece-Neville A-C Generating System rated at 14 volts – 100 amperes. Other 14-volt systems rated at 60, 80 and 150 amperes. For 6-volt circuits, there is a 45-ampere system (convertible to 60) and an 80-ampere system.

LEECE-NEVILLE

Pioneer and STILL Quality Leader

CRANKING MOTORS • GENERATORS • VOLTAGE REGULATORS • SWITCHES

THERE'S NO TOOL LIKE

SPEED WASH

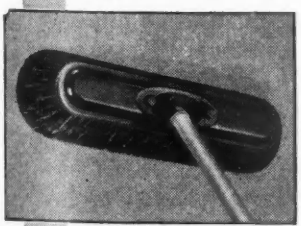
TO CUT DOWN WASHING TIME

Actually Reduces Washing Time 40 to 60%

SPEED WASH fountain brush eliminates all waste motion in truck washing. Clean, fresh water is constantly fed through the handle and eight jets in the brush, right to the washing surface. Speed Wash is easy to handle—entire weight is only 40 ounces.

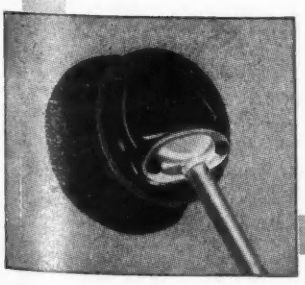
Exclusive construction of Speed Wash makes for long service at low cost. Tufts of Nylon and Horsehair are hand-stitched into block with rust proof wire; they cannot come out or come loose. Block is covered with a permanent steel back. Five foot light weight steel handle is detachable; brush head is economical to replace.

Proved by thousands of users under widely diversified conditions, Speed Wash is unconditionally guaranteed to meet your requirements. Order the style of Speed Wash that best fits your needs on the handy coupon below. Include check for post paid shipment. If you are not completely satisfied, your money will be refunded in full upon return of the brush.



No. 240 Oblong Speed Wash has 11" back. Ideal for washing large trucks, trailers and busses.

Complete with 5' handle **$11.75**



No. 250 Round Speed Wash has 5½" diameter back. Designed for washing light trucks.

Complete with 5' handle **$14.25**

HANDY ORDER BLANK

Milwaukee Dustless Brush Co.
530 North 22nd Street • Milwaukee, Wis.

DATE_____

Gentlemen: Please ship the following Speed Wash brushes.

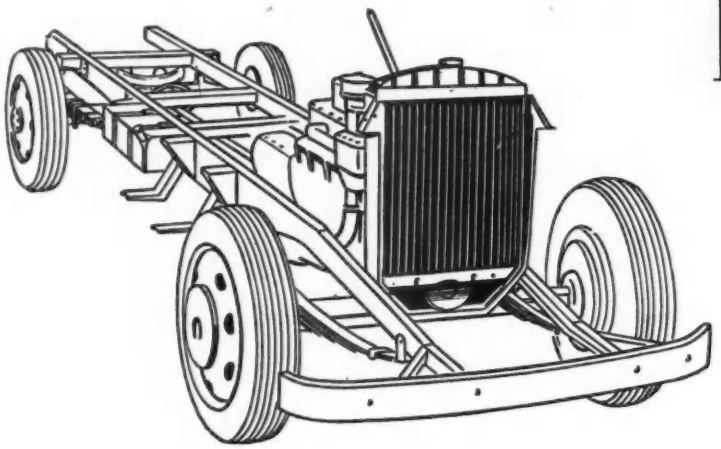
QUANTITY	DESCRIPTION	PRICE	TOTAL
	No. 240 Oblong Speed Wash		
	No. 250 Round Speed Wash		

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

For Higher efficiency... and Lower costs...have the cooling system engineered by HARRISON



Harrison Radiator—with its complete testing laboratories, extensive field experience, and unequalled manufacturing facilities—enables automotive manufacturers to increase the effectiveness of cooling systems and—at the same time—to cut costs.

When a manufacturer of cars or buses, trucks or tractors, presents a problem, Harrison completely engineers the cooling system. It considers fan location, shrouding of the radiator core, restrictions to air movement, size of fittings, method of core mounting, and all other factors affecting performance. By assuring maximum efficiency, the completely engineered cooling system minimizes the size and weight of the core, with corresponding savings in costs of core, mounting, and parts.

Manufacturers are invited to avail themselves of Harrison's resources and facilities to solve any cooling problem, promptly and economically. Harrison Radiator Division, General Motors Corporation, Lockport, New York.

HARRISON

RADIATORS, THERMOSTATS, HEATERS, DEFROSTERS, OIL COOLERS

THE DOCTOR OF MOTORS Rumor Page

IT'S RUMORED THAT: ***Scientists have discovered a new "wonder lubricant" that will not burn, oxidize or decay!***

TRUE! Scientists at Oak Ridge, Tennessee, created it while searching for a protective coating against Fluorine gas—which corrodes almost everything it touches!

*Contributed by C. M. Onspaugh, 28 Lawn Street, Dayton, Ohio.**

IT'S RUMORED THAT: ***Wheat and Oats may soon be used to step up the performance of low-octane gasoline!***

QUITE POSSIBLE! Using alcohol obtained from these products for alcohol-and-water injection, the Department of Agriculture has tested this idea successfully in the Department's own trucks!

IT'S RUMORED THAT: ***1609 fleet operators can now enjoy greater savings through the PC Fleet Survey Plan!***

THEY DO! Through facts uncovered by the free PC Fleet Survey Plan, fleets operating under the survey plan have lower operating and maintenance costs for the 195,000 units they operate! You can, too—just write us for details!

IT'S RUMORED THAT: ***Under-inflated tires can cost a car owner as much as 2 to 3% in the miles-per-gallon a car gets!***

RIGHT Y'ARE! Improperly inflated tires can create *drag* that makes a motor work harder—use up far more gas than necessary!

*Perfect Circle pays $50.00 for any Rumor accepted for this page. None can be returned or acknowledged, and all become PC's property. Send yours to Perfect Circle Corporation, Hagerstown 6, Indiana.

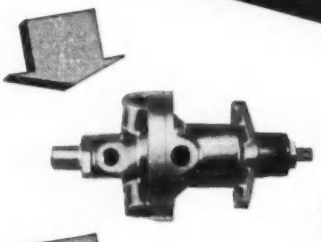
SHOP TIME IS NON-REVENUE TIME

Wagner Air Brakes

help increase payload profits and reduce braking costs

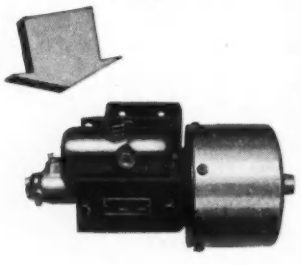
Vehicles "laid up" for repairs because of accidents caused by faulty brakes mean lost revenue. Be sure of your brakes—install Wagner Air Brakes and you will find your brake maintenance costs going down and your payload profits going up.

Used by thousands of fleet owners and truck operators—Wagner Air Brakes are specified by many operators as original equipment.



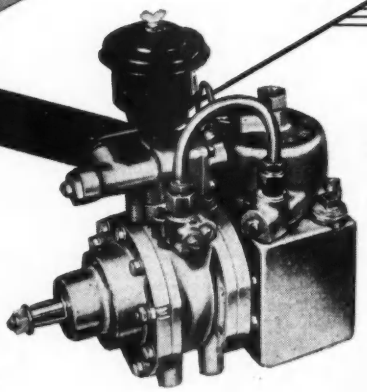
PUSH-TYPE APPLICATION VALVE

Simplifies installation—Designed to mount in place of the master cylinder without drilling holes or cutting through floor. It connects to the present foot pedal.



POWER CLUSTER

Converts 100 pounds per square inch of air pressure into 1500 pounds per square inch of hydraulic pressure.



ROTARY AIR COMPRESSOR

The Wagner Air Brake System is the only system that has the Rotary Air Compressor. It is the heart of the system and assures a sufficient quantity of air at all times. Compactly built, it mounts snugly under the hood and can be either belt or direct-driven.

Send for Complete Information

Complete bulletins on the various Wagner Air Brake Systems will be sent upon request. Write for them today.

Wagner Electric Corporation
6470 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.

Wagner Electric Corporation EST. 1891

LOCKHEED HYDRAULIC BRAKE PARTS AND FORD S. MARC
CoMoK BRAKE LINING · AIR BRAKES · TACHOGRAPHS
ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

The System With The Rotary Compressor

K49-3

Service Exchange Units are available at all Wagner Branches

Commercial Car Journal's

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for 1949

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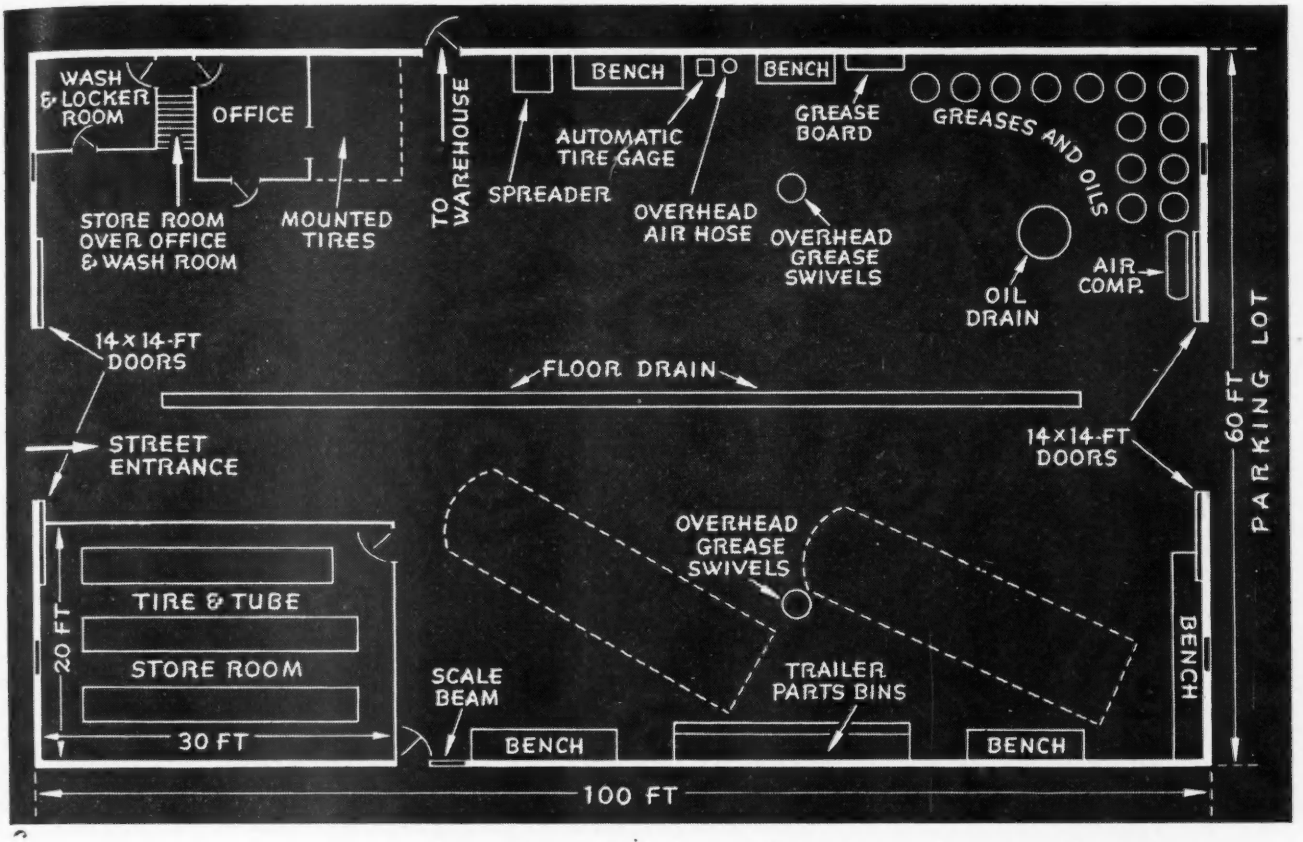


Floor plan of Union Transfer's profitable safety lane. Principal services are lubrication and tire maintenance, although trailers also are serviced

SAFETY LANE SAVES

$30,000 per Year

In addition to cash savings, the 15- to 30-minute checks after each trip have cut road failures, increased engine life

By Arnold Nissen Fleet Superintendent, Union Transfer Co., Omaha, Neb.

WE HAVE approximately 600 units in our fleet. Omaha is our headquarters, with terminal shops at Minneapolis, Chicago, Fort Dodge, Cedar Rapids and Sioux City, Iowa. All major overhauls are made at Omaha, and every piece of equipment goes through our Safety Service Lane each time it is in Omaha.

We have had the lane for three years, and average 40 pieces of equipment through each day. It is in a separate building, a block away from our terminal and shop.

When a driver arrives at the terminal, he goes to the office, turns in his bills, and then immediately takes his equipment to the lane.

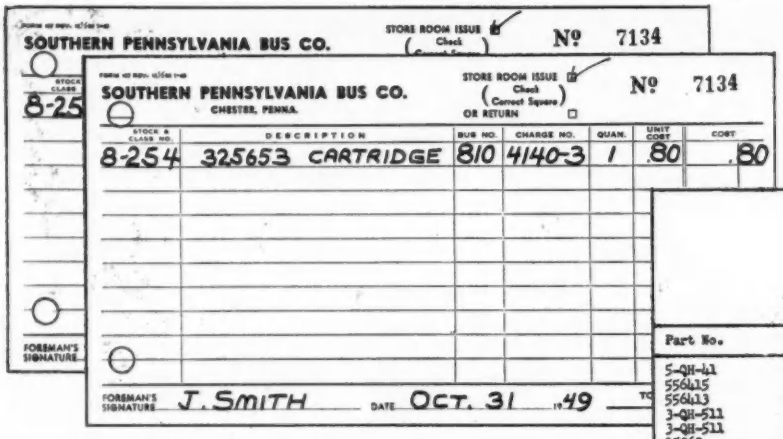
Nine Men Cover Lane

WE EMPLOY nine men at the lane. These include: a mechanic greaser, tire man, two service men, chief hostler, and three trailer mechanics.

The unit driver delivers his unit to one of the service men. This man takes the unit to its location in the lane, which is 100 ft long and 60 ft wide.

Four men go to work on the unit;

(TURN TO PAGE 130, PLEASE)



SOUTHERN PENNSYLVANIA BUS CO.

STORE ROOM ISSUE (Check Correct Square) OR RETURN

No 7134

SOUTHERN PENNSYLVANIA BUS CO.
CHESTER, PENNA.

STORE ROOM ISSUE (Check Correct Square) OR RETURN

No 7134

8-25

STOCK & CLASS NO.	DESCRIPTION	BUS NO.	CHARGE NO.	QUAN.	UNIT COST	COST
8-254	325653 CARTRIDGE	810	4140-3	1	.80	.80

FOREMAN'S SIGNATURE J. SMITH DATE OCT. 31 1949

FIG. 1. The new parts requisition form used by the Southern Pennsylvania Bus Co. This is printed in duplicate, 7¾ x 4¼ in., in pad form, yellow and white paper, and distributed to all shop foremen

CLASS #1 - FRONT AXLE

Front axle assy.
Front axle center
Steering knuckle & king pin
Steering arm
Steering tie rod
Front axle bumper

Part No.	Description	Stock No.	Code
5-QH-41	Arm, steering L.H.	1-235	4-5
556415	Arm, steering cross tube L.H.	1-181	3
556413	Arm, steering front axle	1-144	3
3-QH-511	Axle, front	1-801	4
3-QH-511	Axle, front - repaired	1-802	4
15269	Ball, steering arm	1-114	1-3
557002	Bearing, steering cross tube end	1-102	3
285931	Bushing, steer. knuckle upper & lower	1-178	1
80-AX-215	Bushing, steering knuckle	1-223	4-5
201370	Bushing, steering knuckle-pin frt.	1-136	2-3
15243	Bushing, steering knuckle-upper	1-137	2-3
15244	Bushing, steering knuckle-lower	1-138	2-3
35-AX-467	Cap, steering knuckle dust	1-211	4-5
15247	Cap, steering knuckle pin packing	1-141	2
35-AX-473	Cover, cross steering ball joint dust	1-219	4-5
239463	Cover, cross tube end oil seal	1-148	2
556779	Cover, steering cross tube end dust	1-110	3
292033	Cross tube, steering	1-805	1
B-1039	Cross tube, steering	1-803	2
299907	End, L.H. steering cross tube	1-182	3
ES-22	End, set tie rod steering	1-221	4-5
299906	End, R.H. steering cross tube	1-183	3
41-AX-273	Felt, steering knuckle dust cap	1-212	4-5
201374	Felt, steering knuckle pin packing	1-139	2
245265	Felt, steering knuckle pin packing	1-128	1
245287	Felt, wheel brg. oil seal front	1-131	1
201383	Key, steering arm front axle	1-116	3
225857	Key, steering knuckle pin. ft. axle	1-117	1
299117	Key, steering knuckle 5/8 pin hole	1-118	1
556407	Knuckle, steering assy. R.H.	1-188	3
556408	Knuckle, steering assy. L.H.	1-189	3
13-QH-31	Lever, cross steering R.H.	1-225	4-5
557008	Lock, steering cross tube end plug	1-108	3
GM-119258	Nut, steering cross tube end stud	1-109	3
206411	Nut, front brake spider stud-upper	1-121	3
990103	Nut, front brake spider stud-lower	1-122	3
201384	Nut, steering arm & cross tube arm	1-123	1-3
251827	Nut, lock wheel adj. jam	1-149	1-2
251828	Nut, wheel bearing adj. jam	1-124	1-2
251823	Nut, wheel bearing adj. 1⅛ - 12 thread	1-176	1-2
201373	Nut, steering knuckle pin	1-125	2-3
31-AX-254	Pin, frt. brake spider & hinge	1-206	4-5
31-AX-253	Pin, steering knuckle - large	1-216	4-5
32-AX-37	Pin, cross steering tube bearing	1-217	4-5
239461	Pin, cross tube end	1-146	2

FIG. 2. All parts ordering is done from fleet's own catalog, a page of which is shown at right. Stock number is important, tells where part may be found

Fleet's foremen order parts from own list. Floorman picks up orders, takes parts to the job. Stock arrangement, reordering and control is expeditious

Bus Parts "a la Carte" . . . Tops

TOO MANY bus transportation properties still regard stockrooms as unproductive overhead—a necessary evil. They treat them as such, which means that they get as little attention as possible — until parts shortages occur.

We have adopted a more positive and constructive attitude. The result is that, not only do we have parts on hand when we need them—barring unforeseen emergencies—but maintenance efficiency has been stepped up by eliminating errors, delays and bottlenecks.

System Speeds Parts Service

ONE of the biggest bottlenecks that can occur in supplying parts to the shop men is the lack of adequate information on the part wanted.

There was a time when a mechanic would come up to the parts window and say, "Give me that part that goes from the bottom of the spring over to the rod that comes down from the shock."

If the parts clerk was good at riddles, he might ask, in reply, "Do you mean the spring clip plate?"

"I guess that's what you call it."

"Right or left?"

"Well, if you're facing the bus, it's on the left side."

The parts clerk would walk over to the proper bin—probably mumbling something to himself about dumb mechanics—pick out the desired part, and take it over to the window. If the mechanic accepted the part, the clerk would proceed to make out a slip to cover the part withdrawal. All this might take only a few minutes. A less-experienced clerk might take two or three times longer, depending on whether or not

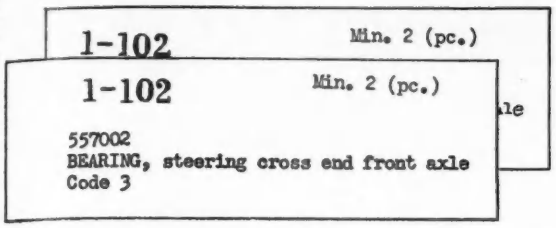
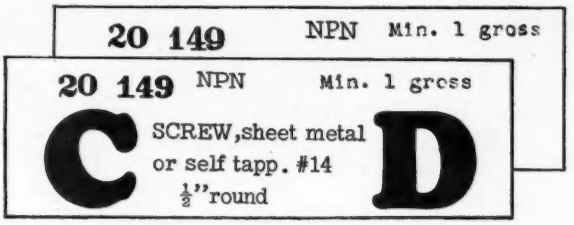


FIG. 3. Parts bin labels are shown above and right. Label above is used for all parts valued at more than 25 cents. Upper left figure is stock number, below is part number. Upper right figure is stock minimum



Label for parts costing 25 cents or less. Letters CD mean Charge Direct, as explained in text. Letters NPN mean No Factory Part Number. When supply is low, duplicate labels go to stock control clerk

FIG. 4. Left. Close-up of parts bins with two types of labels used. Stock numbers run consecutively, wherever possible, and finding them is easy

BELOW. General view of parts store room. Waist-high parts bins do not block light, vision or circulation of air and heat; make high reaching unnecessary. 3200 items are stocked

By William H. Powelson
Superintendent of Equipment,
Southern Pennsylvania Bus Co., Chester, Pa.

in Efficiency

he had to consult parts manuals, and whether he knew that the mechanic wanted the spring clip plate for the right side of the vehicle, regardless if he "faced the bus" or had his back to it.

In the meantime, another mechanic or two would be waiting at the window.

Parts Brought to Mechanic

ALL this time-wasting procedure has been eliminated with our present system which consists of (1) delivering the parts to the mechanic, instead of having the mechanic go to the stockroom, and (2) supplying all shop foremen with parts requisition forms and a detailed parts list to enable them to order necessary parts in accordance with our stock numbering system.

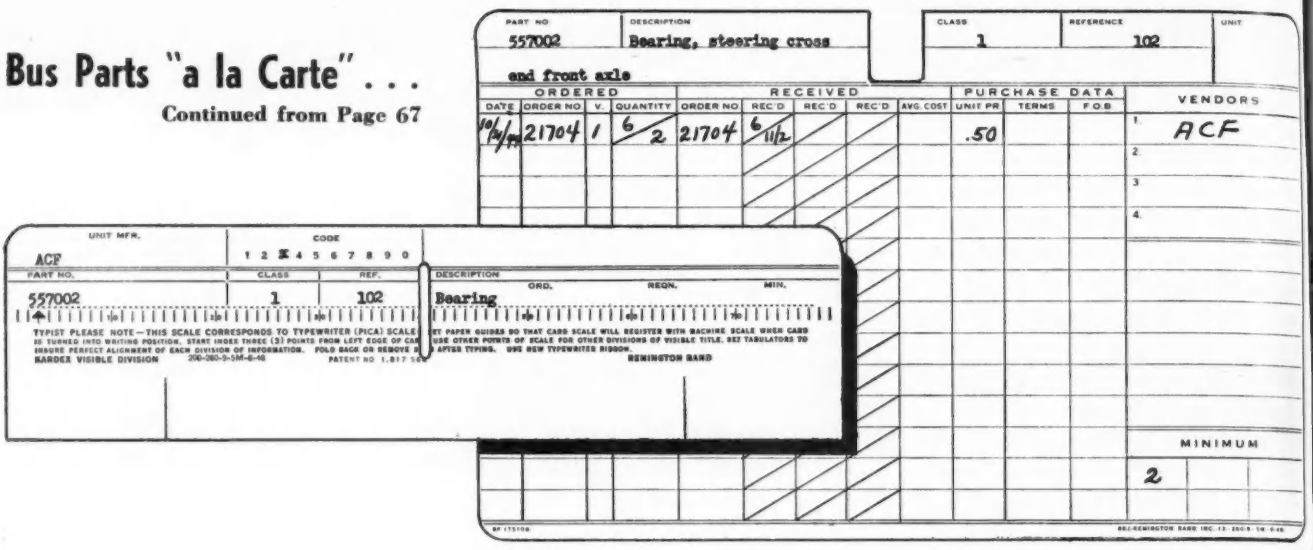
The first of the two changes in our system has increased maintenance efficiency, and has made it unnecessary for any mechanic to be away from his job looking for needed parts. Productive time wasted in going to and from the stockroom, plus wait-

(TURN TO NEXT PAGE, PLEASE)

These units, part of a large section, show wide assortment of nuts, bolts, washers, cotter pins, etc. (CD items), in top bins, gasket assortment below

Bus Parts "a la Carte" . . .

Continued from Page 67



Stock control clerk records all previous day's parts withdrawals, except CD items, and handles the ordering

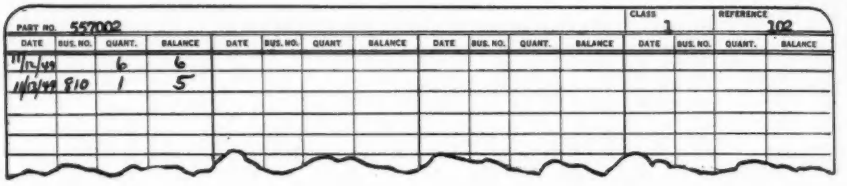


FIG. 5. Southern Pennsylvania Bus Co.'s stock control form consists of three parts as shown above. Large card, 5 x 8 in., is the order section which goes to the purchasing department when the stock of any part or supply item drops to minimum requirement. This card contains all data needed to reorder a part. It is returned to store room's stock control clerk when order has been placed

Narrow strip overlapping order section is visible index label of Kardex system. Code numbers indicate make and model of bus on which the bus part is used

Shown below the top card is a portion of the stock record card, same size as above, which always remains in file so that stock clerk may record disbursals

ing time at the stockroom window, has been completely eliminated. One of the stockroom counter men now is a parts floorman. He takes the parts to the mechanics, the mechanics no longer go to the stockroom.

Our system consists of having the parts floorman make a round of the various shops, and all work in them, to determine what parts will be needed that day. The foremen on the various jobs will have ready a requisition form made out for all parts definitely known to be needed for the day's work. They usually have the requisitions pretty well lined up the night before, as they plan work for the following day. However, they have time in the morning to check the work in progress to see if any additional parts will be needed.

The parts floorman picks up all the requisitions, takes them to the stockroom, locates the requisitioned parts and delivers them on the job. This, of course, only takes into consideration major work. For jobs not requiring all day work, the shop foremen estimate parts needed, fill out the same requisition form, pick up the interdepartmental telephone and call the parts floorman. Inasmuch as this is done either before the mechanics start on the job, or after any necessary inspection and dismantling has been finished, there is practically no time lost on the job. By the time the mechanics will be ready for the part, it will be at their side waiting for them.

The requisition forms, Fig. 1, which the shop foremen use also are part of our new system. Heretofore, the parts men used to fill out a parts withdrawal slip for all parts issued to the mechanics. Now, the shop foreman makes out the requisition. He fills in our stock number (first column) the part's factory number and name (second column), the number of vehicle to which the part is to be charged (third column), the maintenance charge number (fourth column) which is tied-in with our cost accounting system, and the quantity desired (fifth column). The stock control clerk fills in the last two columns, which call for unit and total cost of parts issued.

These forms are made up in pad form, of a size convenient to fit the foreman's pocket. The forms are printed in duplicate, yellow and white paper, both of which are turned over to the parts floorman. The pads also contain an onion skin sheet between the forms, which remains in the pad and provides the foreman with a copy of his requisition, if he ever needs it for reference.

The requisitions are used by the stock control clerk and the fleet maintenance superintendent. The former uses the information to keep the inventory records straight, the latter uses the information to keep abreast of the fleet maintenance problems.

(TURN TO PAGE 101, PLEASE)

Discussion leaders of the "What's Your Problem" panel—Left to right: Harold J. Ericsson, Refiners Transport & Terminal Corp.; Frank J. Wirken, Interstate Bakeries Corp.; Max R. Jensen, Consolidated Freightways, Inc.; W. W. Carpenter, Railway Express Agency, Inc.; C. D. Calkins, Pacific Motor Trucking Co.; Otis O. Barnes, Carolina Coach Co.

Safety Congress Spotlights

Safety Supervisors

National Safety Congress outlines duties, responsibilities of the safety director in cutting accidents, cutting costs, training drivers

By RANDALL R. HOWARD

TO WHAT extent should the safety director of a trucking fleet be considered responsible for slack driving practices and road accidents chargeable to his company truck drivers, and what can the fleet safety director do about the control of driver accidents?

This question, and the problems which it involves, was given special consideration by the several hundred delegates from all sections of the United States and from Canada, during the recent six sessions of the Commercial Vehicle Section of the 37th Annual National Safety Congress held at the Palmer House in Chicago.

In a sense, this was part of a three-year progressive question on what fleet operators can do, in a practical way, to select and train safe truck drivers. At the annual Safety Congress two years ago, the general theme was "Can we spot accident prone drivers?" A year ago special attention was given to displays and discussions of available driver testing equipment as "practical tools" to aid in the examination of drivers. This year it was inevitable that the spotlight should be put upon the safety supervisor.

Kenneth E. Ketzel, General Manager of Fred Olson Motor Service Co., Chicago, brought out some of the basic principles essential to giving managerial importance to a fleet safety department.

"The safety director," he said, "is a general counselor and staff assistant. But for his work to have value in the eyes of management, results must show through the line organization in the company financial reports, on the profit side of the ledger."

This might be done in three different ways. First, through lessening costs from major and minor accidents, as compared with previous operating periods. This would include lessened hold-up of rolling stock for repairs and lessened costs of parts for replacements. Second, reduction

(TURN TO PAGE 112, PLEASE)

MURDER
In the Fleet Field
. . . . the Victim

BATTERIES

Overcharging, undercharging, freezing, low water level and use of "dopes" are some of the most common causes of battery killings. Adjustment of charge rate will save lives

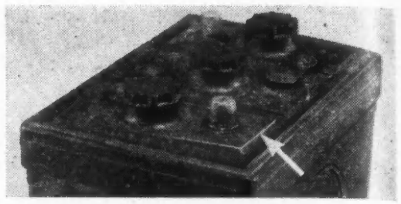
Overcharging is one of the most common causes of battery failure. Here's why—When a battery is charged, water in the electrolyte is broken down into hydrogen and oxygen. The oxygen enters the positive plates to convert the lead sulphate to lead peroxide. Hydrogen combines with the sulphate released from both plates to form sulphuric acid. The negative plates, having lost their sulphate, become sponge lead.

If charging continues, the oxygen gathers at the positive plates, but since it has no lead sulphate to act on, it oxidizes the grid structures themselves. Result is breaking down of the plates, eventual swelling, and finally failure. Excessive water will be used and heating will be noted.

Undercharging, as well, results in damaged plates which cannot function efficiently. Low water level promotes plate sulphation, while a high specific gravity results in plate and grid disintegration.

Preventive measures for most of these conditions are simple—Adjust charging rate to insure that the battery is kept at a fully charged condition. Voltage regulator, generator, wiring should be kept in good condition to prolong life.

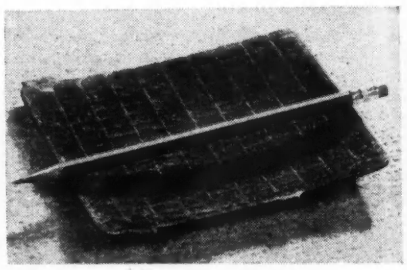
With recurring trouble fleetmen should pull a "post mortem" to determine remedial measures necessary. Here is a pictorial guide to common failures. Photographs of internal and external conditions were supplied through the courtesy of Willard Storage Battery Co., Electric Storage Battery Co., and American Association of Battery Manufacturers.



Cause:
Overcharging

At one stage rising of the battery cell covers at the positive terminals will be noted. This is due to swelling and warping of the plates.

Cause:
Continuous Undercharge



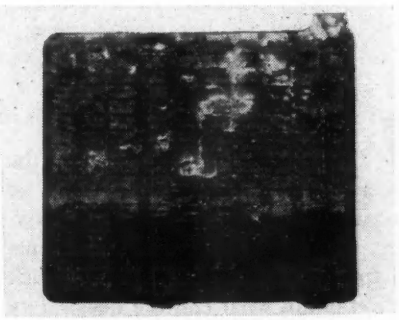
External Effect:

One or more cells may be dead. Battery will heat on recharging, while charge may be impossible.

Internal Effect:

Positive plates will have warped. Negative plates will be hard, and material will show signs of swelling. Separators will be thin or broken.

Cause:
Extreme Sulphation

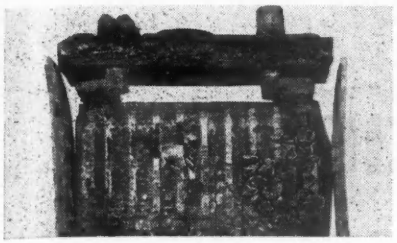


External Sympton:

Continuous heat on attempted recharge. Battery will not take a charge.

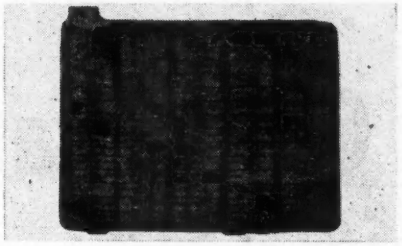
Internal Effect:

Top part of positive plate will be covered with white crystals. Grid will be corroded. Negative plates will be hard and gritty. Lower sections of separators will be hard and brittle.

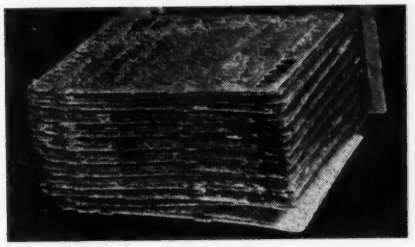


Internal Effect:

Continuous overcharging causes more and more lead to be converted to lead peroxide. Since lead peroxide occupies more space than does the lead in the grid, pressure built up causes swelling.



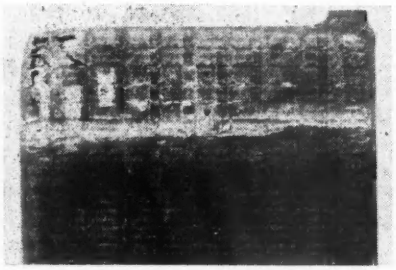
Grid structure of the plate becomes oxidized to such an extent that whole sections of the plate crumble away. This occurs after all the lead sulphate in the positive plates is converted to lead peroxide through charging, after which time the oxygen works on the grids themselves.



Oxygen released from the electrolyte gathers at the positive plates and oxidizes the grid structures. Result is crumbling of the plates.

Cause:

Low Water Level



External Effect:

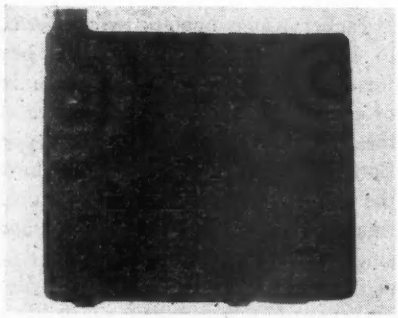
Container may be broken or the seal around cells may be separated. Specific gravity will be low.

Internal Effect:

White crystals will show up on top of the positive plates. Negative plates will be hard and show signs of swelling. Separators will be discolored, with bottom section hard and brittle.

Cause:

Freezing



External Effect:

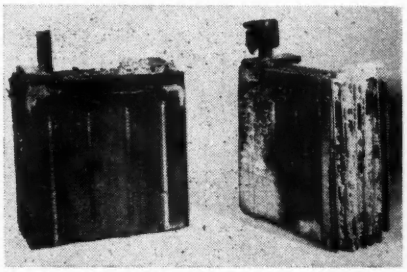
Battery box may be cracked as a result of expansion. Ice may be visible through vents.

Internal Effect:

Both positive and negative plates will be hard, while sections of active material may be evidenced on the positive plates.

Cause:

Alcohol in Electrolyte



Internal Effect:

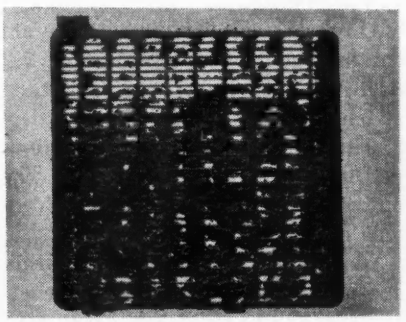
A soluble white substance will be formed on plates. Plates themselves may be eaten away by the solution.

Remedy:

Alcohol, kerosene, salt, calcium chloride or anti-freeze compounds, added to the electrolyte to prevent freezing will ruin the battery within a short time. Keep battery fully charged to prevent freezing.

Cause:

Natural Wear



External Effect:

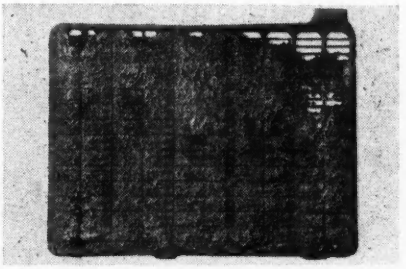
Battery will fail under a capacity test. One or more cells may be dead. It may take charge, but will not hold it.

Internal Effect:

Positive plates will have lost material. Grids may show corrosion and disintegration. Separators will be worn, charred and brittle.

Cause:

High Specific Gravity



Sympton:

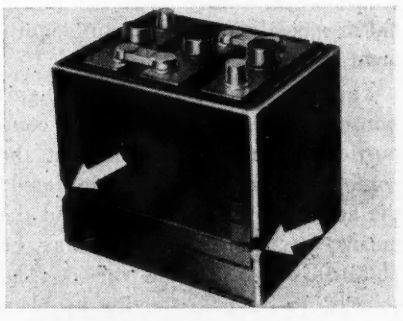
High specific gravity reading both before and after charging. This may indicate that "dopes" have been added.

Internal Effect:

Positive plates will be dark, while negative plates will be swelled and mushy. Separators will be discolored, charred and pliable. Some material on grid may be broken away.

Cause:

Loose Hold Downs



External Effect:

Corrosion around battery box will be noted. Cracks in container may result, while evidence of chafing on the outside of the container may be found.

Internal Effect:

Notches at points where separators rest on the bridges may indicate that the box has been jolting in its carriage.

Diesel Cold Starting—

A Problem of Design and Fuel

Improved injection, combustion chamber design and better starting accessories should be considered. Priming fluid is best aid at present.

By F. L. Nelson*
and
C. J. Ulzheimer
Socony-Vacuum Laboratories
Research and Development Department

Factors Affecting Starting

I. Maintenance
  A. Compression Pressures
  B. Cranking Speed
  C. Injector Performance
II. Auxiliary Equipment
  A. Glow Plugs
  B. Flame Primers
  C. Inlet Air Heaters
  D. Jacket Water Heaters
  E. Priming Fluids
III. Basic Engine Design Factors
  A. Cranking Speed
  B. Compression Ratio
  C. Injection Characteristics
  D. Combustion Chamber Design
IV. Fuel Factors
  A. Cetane Number
  B. Pour Point
  C. Volatility
  D. Fuel Additives
  E. Viscosity

THE COLD weather starting of automotive high speed diesel engines has been, and still is, a problem in the field of transportation and in all stationary installations where engines are exposed to the elements. Present day combinations of fuels and engines find starting difficult at ambient temperatures below 15 to 35 deg. F unless special auxiliary starting equipment is used.

The diesel as a compression ignition engine requires heat in the combustion chamber in order that the combustion process may be initiated; the amount of heat required and the means by which this heat may be obtained are many and varied. The solution to the cold starting problem must, therefore, be one resulting from a cooperative effort between the engine builder and fuel supplier, each recognizing the inherent limitations of the other and offering assistance at the points needed.

It is the operator's duty to maintain his equipment properly with particular regard for compression pressures as influenced by piston ring and valve conditions, injector timing and spray pattern, cranking speed as influenced by maintenance of battery condition and the selection of lubricating oils having suitable viscosity characteristics.

However, even if these items are carefully controlled, the operator will probably not be able to obtain starts at temperatures much below 15 deg. F with the high speed diesel engines and fuels currently available. The operator can, however, take advantage of one of auxiliary aids.

Glow plugs add to battery drain and are quite short-lived due to their constant exposure to the combustion atmosphere, and are therefore frequently unreliable.

Flame primers are quite simple and cause little battery drain; however, they are frequently considered to be unsatisfactory with naturally aspirated engines due to the lack of sufficient excess air for maintaining flame primer and cylinder combustion at the same time. The control required to obtain reasonable starts is quite sensitive.

Inlet air heaters of the "preheat" and "preheat and cranking" type are reported to be effective; but here again an abnormal drain is made on the battery at a time when it can be least afforded.

Jacket water heaters are reported to be quite effective from the performance standpoint. These can be of the electric immersion type or of the fuel burning, circulating type. Both of these types of heaters have the ability to provide starting in cold weather, and minimize high wear and sludge generally associated with cold engine starts. Disadvantages are also inherent with this type of starting aid. In the case of the electric immersion heater, 110 volt current is required thus restricting its use to locations where such power is available. The fuel burning-circulating heaters are encumbered with a large space requirement (3 to 4 cu ft) and a rather high initial cost.

(TURN TO PAGE 120, PLEASE)

* Excerpted from a paper presented at the SAE National Diesel Engine Meeting, St. Louis, Mo.

5-W OIL

Improves Sub-Zero Operation

Tests on 5-W oil show good wear resistance, improved cranking speeds, satisfactory oil consumption rate and suitable viscosity stability

By V. G. Raviolo*
Engineering Research Department
Ford Motor Co

ON APRIL 27, 1948, a meeting of the newly formed Group on Engine Oils Lighter than SAE 10, of the Coordinating Lubricant and Equipment Research Committee was called. The problem was discussed, and the oil and equipment factors involved were outlined. At this meeting, as a result of the available data and experience it was generally agreed that:

1. 10W plus kerosene or other diluent had been unsatisfactory as a cold temperature oil because of its viscosity instability.
2. A cold starting problem does exist with the present oil grades.
3. A new grade of undiluted oil, which has generally been referred to as 5W, with a viscosity range of 1800/3200 SUS at 0°F. showed some promise of aiding in cold starting.
4. The viscosity stability of such an oil should be investigated further to see if it is satisfactory.
5. The improvement in cold starting to be obtained from such an oil should be established, to see if it is enough to justify a new grade.
6. The oil consumption, particularly under warm temperature conditions, should be measured to see if it is excessive.
7. Engine tolerance for the oil as indicated by excessive wear or other signs of unsatisfactory engine operation should be defined.
8. For test purposes the comparison on all points should be made between 10W and the proposed 5W, since it had been shown that 10W and diluent was too unstable for good test work.

Various meetings were held and it was decided that the data available were insufficient for making final conclusions on 5W oil. A program was agreed on, for tests during the winter of 1948-49, calling for further data on wear and cold starting.

The bulk of the 1948-49 laboratory test data have been on the subject of wear, inasmuch as it had been pointed out that the previous data were particularly meager on this subject. Although in many cases the special oils recommended for these tests were not used, and the precise type of information desired was not always available, the great majority of the questions that have been raised can be answered. Data were received from eleven automobile companies and from twenty-three oil companies, covering specifically 93 dynamometer engine tests, 26 trucks, 197 passenger cars, 19 cold room tests, and other various observations.

Viscosity Stability

The majority of the 5W oils tested showed that the viscosity stability of 5W is comparable to that of 10W, but the change in viscosity of the two grades is appreciably less than the actual difference between the grades. The average increase for 5W oils that increased will not bring them into the 10W range. The average decrease of the 10W oils will not bring them into the 5W range, for either the new 5W or after the viscosity increase due to use. A summation of all used oil sample field data except the prediluted oil shows that the viscosity of the 5W oil decreased 0.38 per cent and that the viscosity of the 10W oils decreased 4.5 per cent. The viscosity of prediluted oil increased 19 per cent.

Oil Consumption

The data used in this analysis of oil consumption represented either a controlled test in which 5W and 10W were run alternately in the same vehicle, or one where 5W and 10W were run in vehicles under similar conditions during the test. All of the data submitted which met either of the above requirements were used with the exception of one series of cars which were operated with a 5W oil which was a pre-diluted heavier oil and did not have normal viscosity

(TURN TO PAGE 146, PLEASE)

*Excerpted from a paper presented at the SAE National Fuels and Lubricants Meeting, St. Louis.

Shop hints from FLEET S

1. Lug Wrench Tip

by John S. Barrett
Kraft Foods Co.
Minneapolis, Minn.

I use a trestle to remove or tighten tough wheel nuts. It supports the wrench and gives me a chance to put more pressure on it. The enclosed drawing will show how this jig is used. Advantage of this trick is the fact that your stand is always at hand.

Any regulation garage trestle will do the trick without any adaptation. In some cases it may be necessary to lengthen the wrench so this can be used, but the time saved on a job is well worth it.

2. Ramp Aid

by Elbert S. Barbour
Camp Motor Transport
Camp Lejoune, N. C.

We have in our shop a wheel and frame alignment machine which is located in a pit with a ramp for driving vehicles onto it. It is hard to spot them since the driver cannot always tell where his front wheels are running.

We mounted a 2 x 3-ft mirror directly in front of the left ramp so that the driver can watch the position of his wheels and spot the vehicle exactly where we want it. This idea can be adapted to any such ramp and will save time and an extra man.

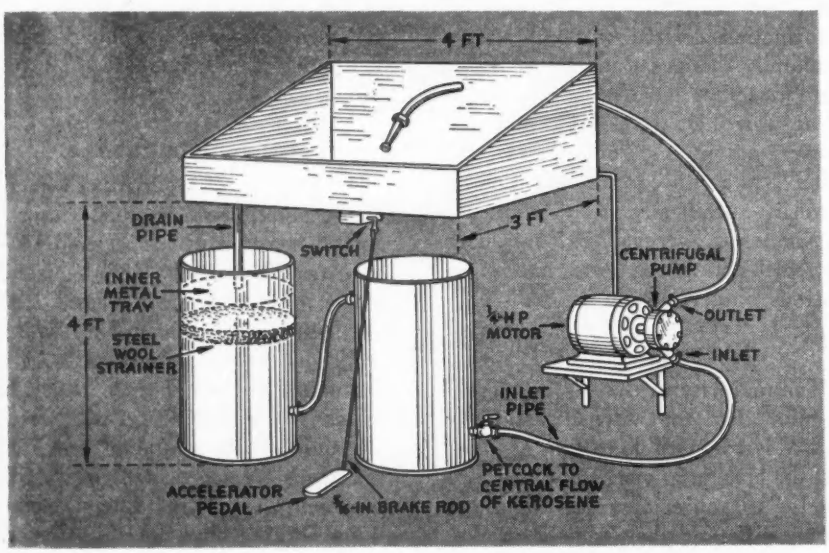
3. Wheel Alignment Gage

by John Horst
Shirk Motor Express
Lancaster, Penna.

Here is a handy home-made device to check alignment of the rear wheels on semis. It can be made up in a little time, and will save you many dollars in increased tire mileage.

The gage is made from a 3/8-in. rod 37½ in. long. Three-quarter x 1-in. strap irons 12 in. long are welded to the rod and apaced 19½ in. apart so that the tool will fit into the wheel. The positioning rod is attached to one side of the cross rod so it will swing freely. An adjustable collar behind this enables the oper-

$25 Hint of the Month ★



Parts Cleaner

by Charles Levy
Gordon Baking Co.
Long Island City, N. Y.

With our fleet of 340 trucks we must have a fast and economical means of cleaning small parts. Here is what we came up with.

We welded together a 4 x 3-ft tray and attached it to the shop wall just 4 ft from the floor. Two 25-gal steel drums were placed under the tank. Drain from the tank is into the first barrel, which if fitted with a perforated metal tray and a strainer made up of a 3-in. thickness of steel wool. An outlet hose placed at the bottom of this drum pipes the solvent into the other through an inlet at the top. The second drum, in turn, is fitted with a

SHOPS

$25 FOR THE BEST HINT PUBLISHED EACH MONTH • • •

$5 FOR ALL HINTS PUBLISHED EACH MONTH

ator to move it along the rod where he desires. This apace rod is made of 3/16-in. stock and is 20¼ in. long.

The photograph shows how the tool is used. After it is positioned inside the wheel, the space rod is dropped down to get proper height. The rod is leveled with the small level, and a tape is strung from the king pin to the front end of the horizontal rod. Then the tool is positioned on the opposite wheel and a similar measurement is taken. Difference between the distances from the king pin to the ends of the rod is the amount the rear bogie is out.

This device is sufficiently accurate for our work.

pipe and a petcock to control the flow of solvent, to the hose nozzle.

A ¼-hp motor powers a centrifugal pump to pump the solvent from the outlet to the hose nozzle or sprayer at the tank. The motor is wired to a switch in front of the tank. This is connected through a 5/16-in. brake rod to an accelerator pedal on the floor. This enables the operator to turn the motor on or off with his foot.

The first drum is kept approximately half full of solvent, while the second drum should be held at about ¾ full.

We find a change of kerosene is necessary in about two months. Steel wool strainer is removed and cleaned each week. Dirty solvent is used on chassis cleaning so that nothing is wasted.

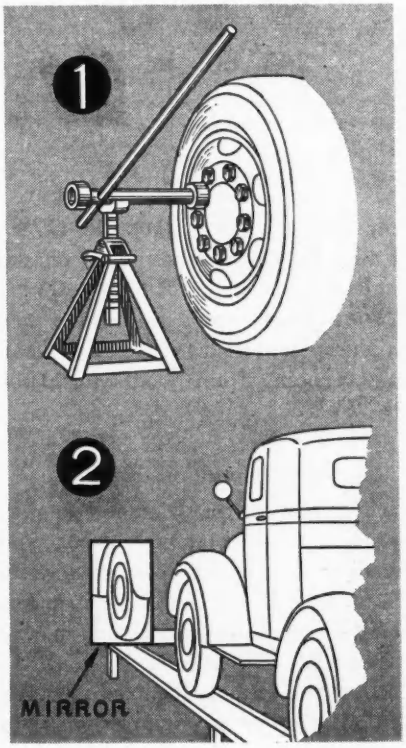
4. Trailer Support

by Ray Diefendorf
Dohrn Transfer
Galesburg, Ill.

Here is a handy jig for any shop doing trailer repairing. It's a space and a time saver.

This portable trailer support is nothing more than a regular fifth wheel mounted on a steel bench. Dimensions are given in the accompanying sketch.

A trailer is unhitched from the tractor and set into the fifth wheel, making possible access to the underbody or the landing gear without danger to the men. Being portable, it can be moved with the trailer.

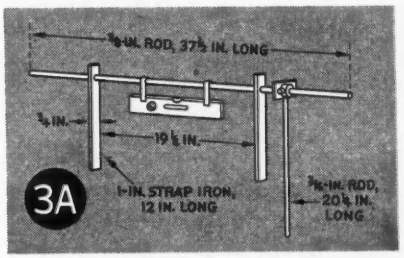


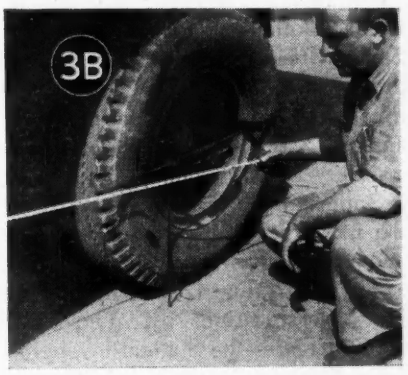
5. Roll Paper Tip

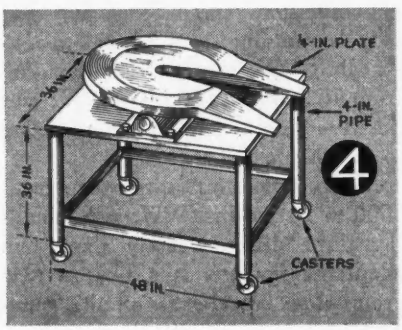
by John H. Greif
Haas, Baruch & Co.
Los Angeles, Calif.

When we purchase armature sand paper, or any other metallic cloth papers that comes in rolls, we immediately spread a thin coat of glue across the face of the roll of paper ¾ in. wide and spaced at approximately 120 deg.

By doing so, the roll of paper does not unroll.







LEFT TO RIGHT. The L-110, L-160 and L-190 feature restyling of front end and cab, new valve-inhead engines, improved chassis dimension engineering

IHC's NEW L-LINE

Uses Improved Valve-in-Head Engines

External restyling, improved visibility, safety and maneuverability are features of L-line. 240 cu. in. Silver Diamond engine is new

THREE new engines of valve-in-head design with completely re-styled chassis have just been announced by International Harvester Co. in the L-line. Both the Super Red and the Super Green Diamond engine now are of overhead valve design. The Silver Diamond is an entirely new engine of the same type. Improved visibility, driver comfort and more eye-appealing styling are features of the new line, with new grilles, cabs and new chassis dimensions.

The new L-line is spearheaded by four classifications of four-wheel model trucks—the Standard, ranging from 4200 to 40,000 lb, GVW; the Schoolmaster, comprising five bus models ranging from 12,500 to 24,000 lb, GVW; the Loadstar, ranging from 16,500 to 29,500 lb, GVW; and the Roadliner, ranging from 16,000 to 30,000 lb, GVW.

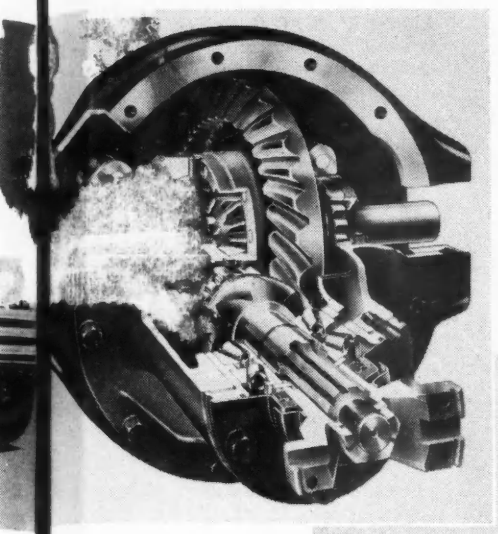
Metro multi-stop units range from 5300 to 10,000 lb, GVW, and including three different body sizes, one adaptable for use as a bus; a new group of six-wheel chassis units, ranging from 22,000 to 50,000 lb, GVW; a new group of cab-forward chassis units, ranging from 14,000 lb, GVW; "West Coast" models include two highway and four off-highway vehicles, ranging from 30,000 to 90,000 lb, GVW.

Silver-Diamond Engine

The new Silver Diamond engine, used in the company's light and medium-duty trucks, is a valve-in-head, six-cylinder power plant and is built in two sizes—the 220 cu in. displacement size at 100 hp and the 240 cu in. displacement size at 108 hp. Each has a compression ratio of 6.5 to 1. Live-rubber cushioning suspends the engine at three points for smoother, quieter power flow and longer engine life.

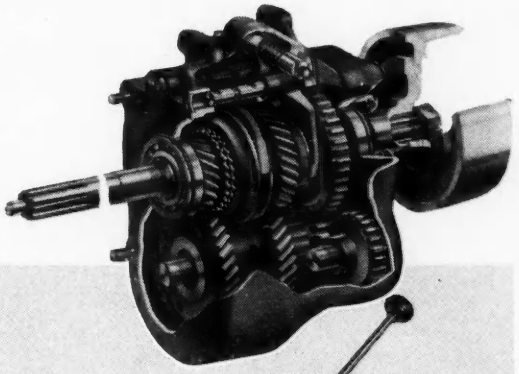
Features of the new valve-in-head Silver Diamond engine are: precision-type, replaceable main bearings; heavy, heat-treated crankshaft, statically and dynamically balanced; precision-engineered, long-lasting timing gears; connecting rods with big bearing area rifle-drilled for full-pressure lubrication to full-floating piston pins.

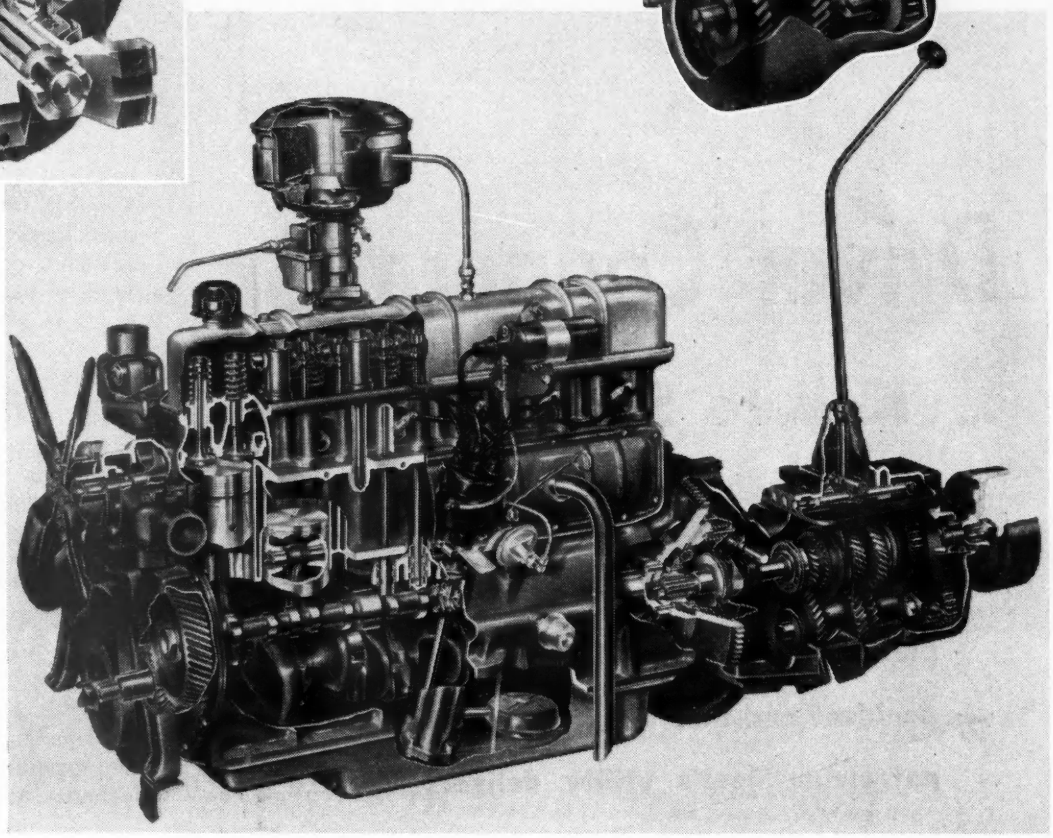
Pistons are of aluminum alloy, with four-rings. Precision-machined combustion chambers assure maximum combustion uniformity and thermal



LEFT. Hypoid drive axles include single reduction, double reduction and two-speed with electric shift

RIGHT. The three-speed, heavy-duty synchroshift transmission is standard on multi-stop, optional on the L-110, L-120, L-130





The Silver Diamond engine is made in 220 and 240 cu in., developing 100 and 108 hp respectively. Compression ratio is 6.5 to 1. Precision mains; aluminum alloy, 4-ring pistons; alloy exhaust valve seat inserts; full-floating pins used

efficiency. Heat-treated, alloy exhaust-valve seat inserts are used. Valve parts and redesigned cylinder jackets provide for maximum heat dissipation.

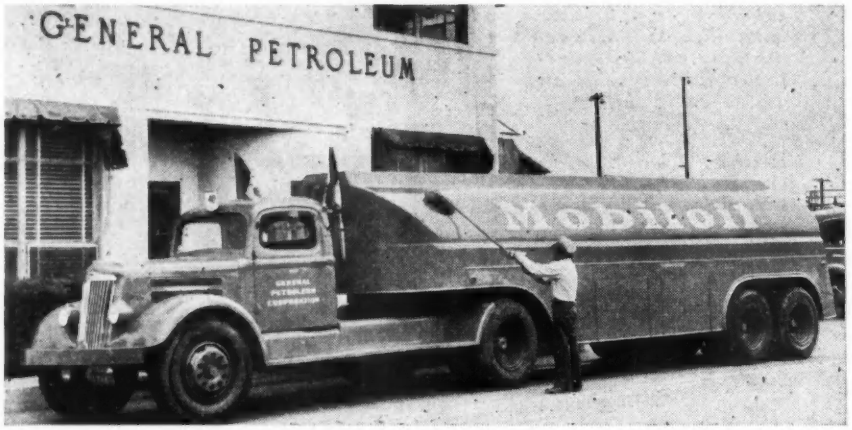
A mechanically sealed, ball-bearing water pump steps up efficiency of cooling system, while a large air-flow fan draws a full blast through the radiator. A bi-metal thermostat regulates water flow to speed engine warm-up and maintains uniform temperature for efficient, economical operation.

Engines are equipped with heavy-duty, dust-sealed carburetors, oversize, oil-bath type air cleaners and

(TURN TO PAGE 126, PLEASE)

Condensed "L" Line Specifications

Model	GVW	Engine	Displacement Cu. In.	HP @ RPM
L-110	4,200	SD-220	220.5	100 @ 3600
L-111	4,500	SD-220	220.5	100 @ 3600
L-112	4,800	SD-220	220.5	100 @ 3600
L-120	5,200	SD-220	220.5	100 @ 3600
L-121	5,700	SD-220	220.5	100 @ 3600
L-122	6,200	SD-220	220.5	100 @ 3600
L-130	6,800	SD-220	220.5	100 @ 3600
L-131	7,400	SD-220	220.5	100 @ 3600
L-132	8,000	SD-220	220.5	100 @ 3600
L-150	9,000	SD-220	220.5	100 @ 3600
L-151	10,750	SD-220	220.5	100 @ 3600
L-152	12,500	SD-220	220.5	100 @ 3600
L-153	12,500	SD-220	220.5	100 @ 3600
L-160	14,000	SD-240	240.3	108 @ 3600
L-161	15,000	SD-240	240.3	108 @ 3600
L-162	16,000	SD-240	240.3	108 @ 3600
L-163	15,500	SD-240	240.3	108 @ 3600
L-164	16,500	SD-240	240.3	108 @ 3600
L-165	16,000	SD-240	240.3	108 @ 3600
L-170	16,000	BD-269	269.1	100 @ 3000
L-171	17,000	BD-269	269.1	100 @ 3000
L-172	18,000	BD-269	269.1	100 @ 3000
L-173	17,500	BD-269	269.1	100 @ 3000
L-174	18,500	BD-269	269.1	100 @ 3000
L-175	18,000	BD-269	269.1	100 @ 3000
L-180	17,000	BD-269	269.1	100 @ 3000
L-181	19,000	BD-269	269.1	100 @ 3000
L-182	21,000	BD-269	269.1	100 @ 3000
L-183	19,500	BD-269	269.1	100 @ 3000
L-184	21,500	BD-269	269.1	100 @ 3000
L-185	19,000	.....	.....	.....
L-190	21,000	RD-372	372.1	143.8 @ 3200
L-191	23,000	RD-372	372.1	143.8 @ 3200
L-192	25,000	RD-372	372.1	143.8 @ 3200
L-193	24,000	RD-372	372.1	143.8 @ 3200
L-194	25,500	RD-372	372.1	143.8 @ 3200
L-195	24,000	RD-372	372.1	143.8 @ 3200
L-200	24,000	RD-406	405.9	154 @ 3200
L-201	27,000	RD-406	405.9	154 @ 3200
L-202	29,000	RD-406	405.9	154 @ 3200
L-204	29,500	RD-406	405.9	154 @ 3200
L-205	27,000	RD-450	451.0	158 @ 2600
L-210	30,000	RD-450	451.0	158 @ 2600
L-211	34,000	RD-450	451.0	158 @ 2600
L-220	30,000	.....	.....	.....
L-225	30,000	.....	.....	.....



Lionel Ward, G.P. driver, dusts off his vehicle before taking it out. This is typical procedure for all G.P. drivers

Driver Cooperation

. . . Key to Safe Operation

"Esprit de corps," fostered by management plus six-point educational program, cuts accident and time loss, improves morale of petroleum fleet's utility delivery service

By Calvin T. Thomas
Manager Automotive Equipment
General Petroleum Corporation
Los Angeles, Cal.

IT IS A MAJOR PREMISE, here, at General Petroleum, that everybody is on the management team. And that's not just an idealistic concept; it's a working arrangement. In our end of the business we see it at work every day, for drivers, supervisors, dispatchers, mechanics, all know that they are important to the success of our fleet operation. We are constantly trying to strengthen that relationship still further through personal contact.

Much of my own time is spent in the field; not necessarily in office conferences but with the drivers themselves. I know that the best way to give a driver help and to get his thoughts on how to improve our operation is to ride with him and exchange ideas on a personal, informal basis. If correction is indicated I can explain it to him on the spot; if commendation is in order I'm only too glad to give it. The same practice is observed by the division management personnel to whom the drivers report directly.

Employee Cooperation Good

MANY of our present drivers have grown up with our company. Many of them are the sons of older employees. But, even aside from family relationships, there is a spirit of helpfulness that prevails among all of our fleet maintenance personnel.

Throughout our entire program there is constant attention given to that element of employee cooperation without which no plan can operate successfully. It is a consideration well stated in our objective: to operate efficiently, courteously, safely and profitably.

Through the years the result of our efforts in this direction has been unmistakably reflected in reduced accident rates, improved morale of participating personnel, increased economy of operation and a minimum of lost time for major repairs.

Driver Record Cited

AMONG our outstanding records of driver performance are those cited below for continuous operation without a chargeable accident.

Driver	*Miles*	*Years*
1	358,209	14
2	347,969	15
3	344,769	15
4	324,358	15

Such records are particularly commendable since they were confined principally to city deliveries where the exposure frequency is at the highest.

A definite effort is made to improve our operations by studying and enlarging upon the six human fac-

(TURN TO PAGE 124, PLEASE)

To help all G. P. drivers understand company regulations and policies, all drivers get an Operating Procedure Manual. T. V. McLean, Chief Dispatcher, hands driver Gene Meeder his copy. This is part of General Petroleum's broad educational program

America's school children and their teachers know what it takes to make traffic safe!

The same kind of caution among all of us would prevent many street and highway accidents!

"TAKING it easy" is one important first step toward real traffic accident prevention in any community.

Police departments, the nation over, urge pedestrians to "take it easy" when they step off the curb—advise drivers to "take it easy" when they step on the gas.

Too few of us, perhaps, pay enough heed to the suggestion—but America's youngsters of grade-school age very definitely do. Their record is a splendid one.

A record to be proud of

National Safety Council figures show a decrease of 30% in the traffic death rate in the 5-14 age group since safety teaching in the schools began.

Enlightened school systems deserve everyone's gratitude for introducing traffic safety instruction programs.

Teachers themselves, often at a sacrifice of leisure time, organize and supervise schoolboy and schoolgirl traffic safety patrols.

Children take to the idea of accident prevention with a zest, when they're given a continuing responsibility for putting it into practice.

The good work is even extending into the high schools now. More and more courses of driving instruction are being instituted.

New pace-setters needed

Thoughtful Americans realize, of course, that it's the grown-ups of the nation, as well as the youngsters, who should be striving to cut the accident rate.

The time has come for every individual to play a personal part in reducing street and highway mishaps.

Everyone can do something

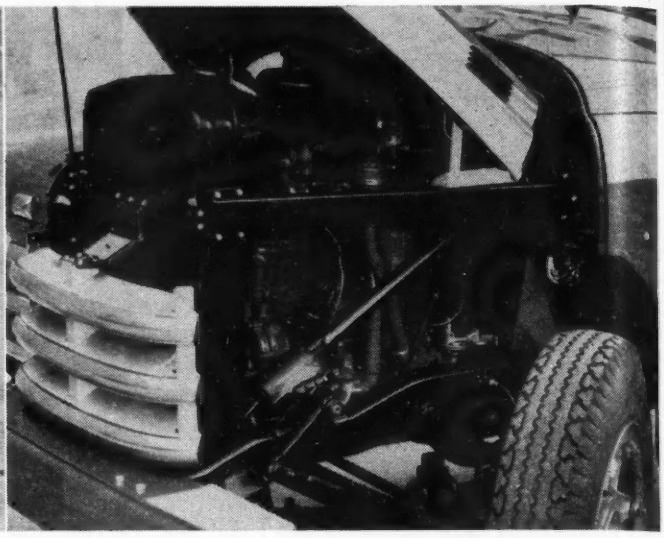
One urgent need is for more intelligent, more considerate, more co-operative driving and walking. The result inevitably will be fewer accidents and a smoother flow of vehicles through congested areas.

As part of this nation's life and traditions for nearly 98 years, Studebaker feels confident that American initiative and resourcefulness can and will effectively cope with the traffic accident problem.

STUDEBAKER

Serving America with soundly built transportation vehicles since 1852

IN THREE minutes mechanic can remove the "quick-detachable" fender for easy access to engine. Note louvres and cross channels providing fresh air to the air cleaner



LEFT fender is removed to reveal steering gear, distributor and water pump. BELOW. The 2½-ton model 620, typical of the new cab and front end streamlining of all models

1950 Diamond T's

Accessibility and economy is keynote of new line. Shorter wheelbase improves maneuverability

A NEW DESIGN, new cabs, improved accessibility and revised dimensions are features of the 1950 line of Diamond T trucks. Three basic models—the 420, 520 and 620—use the Diamond T Hercules engine with improvements designed for new efficiency and economy.

Companion models—the 420H, 520H and 620H carry maximum GVW ratings when equipped with optional heavy-duty axles. Standard and optional wheelbases range from 130 to 250 in., the 220 and 250-in. chassis being intended for school buses. On all models the front axles have been moved back 9¾ in.

Engines are mounted on a new four-point suspension system. Accessibility is the keynote of the new design, with the development of a "quick detachable" front fender assembly providing easy access to all work below the cylinder head. Hood steering gear, radiator and even the engine can be removed quickly.

The six-cylinder engine in the 650T tractor is of overhead design with alloy iron block heat-treated to eliminate casting strains. Bore and stroke are 4 5/16 x 4⅞ in. The engine develops 140 hp at a governed speed of 2600 rpm.

The 7-bearing crankshaft is 2⅞ in. in diameter, counter-weighted and dynamically balanced to ½ in. oz. Journals are Tocco-hardened. Pistons are of aluminum alloy with five rings (2 oil). Main bearings are of the precision type, steel-backed and lead base babbitt lined in a sintered cop-

(TURN TO PAGE 150, PLEASE)

Condensed Specifications

Model	420	520	620
GVW	16,300-17,200	18,200-19,600	21,200-22,200
GTW	30,000	35,000	35,000
Wb.	130	130-142	130-142
Engine	Diamond T-Hercules 6-cyl L-head		
Std.	JXB	JXC	JXD
Opt.	JXC	JXLD	JXLD
	JXD	JXD	
Brakes:			
Front	Lockheed	Lockheed	Lockheed
Rear	Wagner	Wagner	Wagner
Trans.:			
Std.	Warner T9A	Warner T9A	Clark 205V
Opt.	Warner T98	Warner T98	Clark 205VO
	Warner 205VO	Warner 205VO	
	Warner 205V	Warner 205V	
Clutch:			
Std.	B&B 11-in.	B&B 11-in.	B&B 12-in.
Opt.	B&B 12-in.	Lipe 12-in.	Lipe 12-in.
		B&B 12-in.	
Rear Axle:			
Std.	Clark R1000	Clark R1250	Eaton 1715
Opt.	Eaton 1350	Eaton 1715	Eaton 18500
	Clark R1250	Eaton 18500	
		Eaton 1350	

Fleets Replace
TRANSMISSIONS at 68,717 Miles

Average life of individual transmission parts, as reported by 185 fleets, shows that oil seals are first to wear out at 56,827 miles; second are bearings at 73,952 miles; gears at 83,393

FLEET OPERATORS' EXPERIENCE HANDBOOK

SURVEY NO. 14

Part 2

Analysis **by A. W. GREENE,** *Managing Editor, Commercial Car Journal*

THIS SURVEY of transmission life takes into consideration the two types of maintenance given this component part: Unit replacement and unit repair. Some fleets handle transmission maintenance one way, some both ways.

Table I shows that 137 fleets supplied the average mileages at which they have replaced entire transmissions, and 185 fleets supplied average mileages at which the various transmission parts were replaced.

All of the 137 fleets supplying mileage information on unit replacement do not confine themselves to this method of trans-

56,827 MILES

Oil Seals are Least Durable of Transmission Parts

Table 1

Some fleets get as few as 5000 miles, others as many as 170,000; national average is 56,827 miles. Life of bearings 30% greater; gears, 47% greater

VOCATIONAL GROUPS	Number of Fleets Reporting Average Unit Replacement Mileage	TRANSMISSIONS Mileage Range (Last 000 Omitted)	TRANSMISSIONS Mileage Average	Number of Fleets Reporting Average Parts Replacement Mileage	TRANSMISSION GEARS Mileage Range (Last 000 Omitted)	TRANSMISSION GEARS Mileage Average	TRANSMISSION BEARINGS Mileage Range (Last 000 Omitted)	TRANSMISSION BEARINGS Mileage Average	TRANSMISSION OIL SEALS Mileage Range (Last 000 Omitted)	TRANSMISSION OIL SEALS Mileage Average
FOR-HIRE CARRIER	24	20 - 125	77,083	28	20 - 300	112,973	20 - 175	107,360	20 - 100	79,900
FOOD DISTRIBUTION	30	15 - 150	73,900	47	19 - 275	88,383	19 - 275	76,682	12 - 150	59,611
GOVERNMENT	23	20 - 175	56,000	32	20 - 180	58,844	18 - 180	55,150	10 - 100	38,984
CONSTRUCTION AND MINING	6	30 - 80	56,667	7	30 - 200	86,786	20 - 100	57,500	17 - 88	50,357
INDUSTRIAL	3	50 - 75	58,333	3	80 - 125	101,670	60 - 100	80,000	50 - 80	63,334
PETROLEUM	9	40 - 200	98,444	11	30 - 260	112,000	30 - 150	83,450	15 - 150	60,222
PUBLIC UTILITY	21	15 - 175	56,000	28	25 - 100	55,000	20 - 100	52,900	20 - 100	43,958
RETAIL DELIVERY	13	20 - 150	69,615	18	7 - 200	74,834	14 - 200	74,647	5 - 150	55,294
TRUCK RENTAL	3	30 - 50	43,334	5	30 - 100	52,000	20 - 100	54,000	20 - 60	41,000
TRUCK & BUS FLEETS, MIXED	5	67 - 120	89,470	8	25 - 350	142,500	25 - 170	97,124	20 - 170	89,375
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	137	15 - 200	68,717	185	7 - 350	83,393	14 - 275	73,952	5 - 170	56,827

Composition of Vocational Groups as Used in the Accompanying Tables

FOR-HIRE CARRIER—Motor Freight Operators in Local and Over-the-Road Service.
FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Products fleets.
GOVERNMENT—State, County, Municipal, and Federal fleets.
CONSTRUCTION AND MINING—Building, Mine, Quarry, and Gravel fleets.
INDUSTRIAL—Fleets operated by manufacturers.
PETROLEUM—Production and Distribution fleets.
PUBLIC UTILITY—Gas, Power, Water and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products), Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
TRUCK AND BUS FLEETS, MIXED—Passenger carriers operating own truck fleets.

mission maintenance. About 35 per cent of these fleets either replace or repair transmissions, whichever happens to be more expedient. They have been included in both tables because they supplied average mileage information both ways. This information is not conflicting. Its use gives a better picture of the maintenance practices of this component unit by the best maintained fleets in the country.

Oil Seals Least Durable

A STUDY of the figures reported by fleets that supplied the individual parts mileages shows that the oil seal apparently is the least durable part of the transmission. The average life, for all reporting fleets, is 56,827 miles.

Transmission bearings show 73,952 miles, or about 30 per cent more mileage than the seals, and transmission gears, 83,393 miles, or about 47 per cent more life than the seals, but only about 13 per cent more life than the bearings.

These percentages seem low, especially for the gears. Six of the 10 vocational groups show averages that top the national average, which indicates that it is possible to increase the life of these parts. Moreover, the reported mileages range as high as 350,000 miles for the transmission gears, and as high as 275,000 miles for the bearings; the latter admittedly very unusual.

Acknowledging the fact that these high average mileages are in the minority, nevertheless, they include high-mileage and multi-stop fleets that admittedly are hard on transmissions. Furthermore, it should be noticed that all of the vocational groups which show better than average mileage for oil seals, also show better than average mileage for both the bearings and gears. There appears to be a definite relationship.

Transmissions Replaced at 68,717 Miles

FLEETS that replace the entire unit, when troubles hit the transmission, do so at an average of 68,717 miles. Inasmuch as this mileage is 20 per cent greater than the reported life of the transmission's weakest part—oil seal—it gives rise to speculation that quite a few of these fleets must be operating vehicles with leaky and noisy transmissions.

While that may be true, to a degree, there is an equal probability that these fleets simply are getting better performance. The basis for this assumption lies in the fact that four of the five vocational groups are the same as those showing higher average mileages for the individual transmission parts. True, these are different fleets, but the overlap of the two maintenance systems must be considered. This overlap is sufficient to make itself noticeable in the final results.

The only other comment concerning the figures shown in Table 1 is the two unusual low mileages reported in the Retail Delivery vocational group. These data were furnished by a southern beverage fleet that, apparently, has been having an epidemic of clutch and transmission troubles as, normally, it is one of the best-maintained fleets in the south.

Gear Shift Mechanisms

TABLE 2 shows the average life of the various gear shifting mechanism; only 159 fleets supplied data on these parts. All of these reported on the mechanical transmission gear shift parts. From the facts supplied, it appears that these parts have a shorter average life than transmission bearings. This seems too low. The high mileages shown in the range indicate that it is possible to get more miles from these parts.

One fleet group, Industrial, does show a much higher average. However, only two fleets in that group are reporting; one with an average of 50,000 miles and the other with 200,000 miles as the average life. The group average, therefore, probably is not truly representative of that industry.

The need for individual fleet study of the causes for the low average mileage of transmission parts seems to be indicated from the various figures shown in both tables. Perhaps the general gripe of fleet maintenance men, that most transmissions should be better ventilated to reduce their internal pressure and operating temperature, is based on sound reasoning.

Table 2 also contains average mileage life of power shifting mechanisms. About 40 per cent of the reporting fleets supplied information on the vacuum type, a little over five per cent gave average mileage figures on the electric type. The electric type shows a better average in the comparison. However, in fairness to both types, it should be pointed out that, inasmuch as there is so great a difference in the number of fleets reporting on these parts, final opinions should be held in abeyance until a more equable study can be made.

68,815 MILES

What is the Life Expectancy of Gear Shift Parts?

Table 2

Mechanical transmission gear shift parts show a wide range; low is 5000, high is 275,000 miles. Vacuum and electric power shifter life also given

VOCATIONAL GROUPS	Number of Fleets Reporting Average Replacement Mileage	MECHANICAL SHIFT PARTS Mileage		POWER SHIFTER—VACUUM Mileage		POWER SHIFTER—ELECTRIC Mileage	
		Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average
FOR-HIRE CARRIER	22	17 – 250	94,295	15 – 200	58,834	200	200,000
FOOD DISTRIBUTION	39	6 – 275	76,743	30 – 100	64,750	50 – 100	75,000
GOVERNMENT	28	15 – 100	51,188	15 – 50	34,334	20 – 50	35,000
CONSTRUCTION AND MINING	6	30 – 100	66,250	25 – 50	41,250	.....	.....
INDUSTRIAL	2	50 – 200	125,000	.....	.....	.....	.....
PETROLEUM	10	40 – 150	84,200	5 – 200	69,286	.....	.....
PUBLIC UTILITY	24	15 – 90	44,667	10 – 100	39,667	.....	.....
RETAIL DELIVERY	15	5 – 150	63,500	30 – 150	82,500	.....	.....
TRUCK RENTAL	5	20 – 60	36,000	50 – 60	55,000	55	55,000
TRUCK AND BUS FLEETS, MIXED	8	25 – 150	93,347	120	120,000	59 – 120	89,514
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	159	5 – 275	68,815	5 – 200	54,040	20 – 200	76,559

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TRANSMISSIONS at 68,717 Miles

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		Range (Last 000 Omitted)	Average		Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average
FOR-HIRE CARRIER	24	20 - 125	77,083	28	20 - 300	112,973	20 - 175	107,360	20 - 100	79,900
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RETAIL DELIVERY	13	20 - 150	69,615	18	7 - 200	74,834	14 - 200	74,647	5 - 150	55,234
TRUCK RENTAL	3	30 - 50	43,334	5	30 - 100	52,000	20 - 100	54,000	20 - 60	41,000
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PETROLEUM—Production and Distribution fleets.
PUBLIC UTILITY—Gas, Power, Water and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products), Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
TRUCK AND BUS FLEETS, MIXED—Passenger carriers operating own truck fleets.

mission maintenance. About 35 per cent of these fleets either replace or repair transmissions, whichever happens to be more expedient. They have been included in both tables because they supplied average mileage information both ways. This information is not conflicting. Its use gives a better picture of the maintenance practices of this component unit by the best maintained fleets in the country.

Oil Seals Least Durable

A STUDY of the figures reported by fleets that supplied the individual parts mileages shows that the oil seal apparently is the least durable part of the transmission. The average life, for all reporting fleets, is 56,827 miles.

Transmission bearings show 73,952 miles, or about 30 per cent more mileage than the seals, and transmission gears, 83,393 miles, or about 47 per cent more life than the seals, but only about 13 per cent more life than the bearings.

These percentages seem low, especially for the gears. Six of the 10 vocational groups show averages that top the national average, which indicates that it is possible to increase the life of these parts. Moreover, the reported mileages range as high as 350,000 miles for the transmission gears, and as high as 275,000 miles for the bearings; the latter admittedly very unusual.

Acknowledging the fact that these high average mileages are in the minority, nevertheless, they include high-mileage and multi-stop fleets that admittedly are hard on transmissions. Furthermore, it should be noticed that all of the vocational groups which show better than average mileage for oil seals, also show better than average mileage for both the bearings and gears. There appears to be a definite relationship.

Transmissions Replaced at 68,717 Miles

FLEETS that replace the entire unit, when troubles hit the transmission, do so at an average of 68,717 miles. Inasmuch as this mileage is 20 per cent greater than the reported life of the transmission's weakest part—oil seal—it gives rise to speculation that quite a few of these fleets must be operating vehicles with leaky and noisy transmissions.

While that may be true, to a degree, there is an equal probability that these fleets simply are getting better performance. The basis for this assumption lies in the fact that four of the five vocational groups are the same as those showing higher average mileages for the individual transmission parts. True, these are different fleets, but the overlap of the two maintenance systems must be considered. This overlap is sufficient to make itself noticeable in the final results.

The only other comment concerning the figures shown in Table 1 is the two unusual low mileages reported in the Retail Delivery vocational group. These data were furnished by a southern beverage fleet that, apparently, has been having an epidemic of clutch and transmission troubles as, normally, it is one of the best-maintained fleets in the south.

Gear Shift Mechanisms

TABLE 2 shows the average life of the various gear shifting mechanism; only 159 fleets supplied data on these parts. All of these reported on the mechanical transmission gear shift parts. From the facts supplied, it appears that these parts have a shorter average life than transmission bearings. This seems too low. The high mileages shown in the range indicate that it is possible to get more miles from these parts.

One fleet group, Industrial, does show a much higher average. However, only two fleets in that group are reporting; one with an average of 50,000 miles and the other with 200,000 miles as the average life. The group average, therefore, probably is not truly representative of that industry.

The need for individual fleet study of the causes for the low average mileage of transmission parts seems to be indicated from the various figures shown in both tables. Perhaps the general gripe of fleet maintenance men, that most transmissions should be better ventilated to reduce their internal pressure and operating temperature, is based on sound reasoning.

Table 2 also contains average mileage life of power shifting mechanisms. About 40 per cent of the reporting fleets supplied information on the vacuum type, a little over five per cent gave average mileage figures on the electric type. The electric type shows a better average in the comparison. However, in fairness to both types, it should be pointed out that, inasmuch as there is so great a difference in the number of fleets reporting on these parts, final opinions should be held in abeyance until a more equable study can be made.

68,815 MILES

What is the Life Expectancy of Gear Shift Parts?

Table 2

Mechanical transmission gear shift parts show a wide range; low is 5000, high is 275,000 miles. Vacuum and electric power shifter life also given

VOCATIONAL GROUPS	Number of Fleets Reporting Average Replacement Mileage	MECHANICAL SHIFT PARTS Mileage		POWER SHIFTER—VACUUM Mileage		POWER SHIFTER—ELECTRIC Mileage	
		Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average
FOR-HIRE CARRIER	22	17 – 250	94,295	15 – 200	58,834	200	200,000
FOOD DISTRIBUTION	39	6 – 275	76,743	30 – 100	64,750	50 – 100	75,000
GOVERNMENT	28	15 – 100	51,188	15 – 50	34,334	20 – 50	35,000
CONSTRUCTION AND MINING	6	30 – 100	66,250	25 – 50	41,250		
INDUSTRIAL	2	50 – 200	125,000				
PETROLEUM	10	40 – 150	84,200	5 – 200	69,286		
PUBLIC UTILITY	24	15 – 90	44,667	10 – 100	39,667		
RETAIL DELIVERY	15	5 – 150	63,500	30 – 150	82,500		
TRUCK RENTAL	5	20 – 60	36,000	50 – 60	55,000	55	55,000
TRUCK AND BUS FLEETS, MIXED	8	25 – 150	93,347	120	120,000	59 – 120	89,514
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	159	5 – 275	68,815	5 – 200	54,040	20 – 200	76,559

Best Ring for Oil Control in

BADLY TAPERED and OUT-OF-ROUND BORES!

SEALED POWER MD-50 STEEL OIL RING

The only ring with the FULL-FLOW SPRING

Sealed Power
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BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

BEST FOR OIL WIPING—OIL DRAINING—OIL SAVING!

SEALED POWER CORPORATION • MUSKEGON, MICHIGAN

SPECIAL trade-in offer

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The time has come when it will pay you to pension-off your "Old Faithful" and modernize your hauling with a new Mack truck. *Sure there's years more work left in your Mack.* That's proved by the thousands of Macks on the road well over 15 years old. As an old friend, we want you to get the benefits of a modern Mack. We want you to get the advantage of Mack's special trade-in allowance offer.

Why it will pay you to modernize NOW with Mack

1. *You may never again be able to trade in your 15 year or older Mack* at so good a price—for the simple reason that your dollars today will buy more than they ever did before.

2. *New Macks have the built-in stamina and endurance* that has made Mack famous—PLUS tested, new features that insure still lower hauling costs.

3. *Remember, when truck-price is the battleground of purchase . . .* proved quality, proved dependability, proved longest life, PROVED MOST TON-MILES PER DOLLAR, are the only yardsticks by which you can truly measure the purchasing power of your truck money.

So get in touch with your nearest Mack branch or dealer today. Ask for the trade-in price on your old Mack.

***At the last official count of R. L. Polk, there were 12,970 MACK TRUCKS 15 years and older still in operation.**

Modernize with Mack

"Built Like A Mack —To Outlast Them All"

Mack Trucks, Inc., Empire State Bldg., New York 1, N. Y. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and dealers in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

Truck Specifications Table

OF CURRENT PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

Key to Definitions, References and Abbreviations

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

(2) International Harvester—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

(a)—Available with Two-Speed Axle designated KBS Models.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
BW—Bendix-Westinghouse
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
G-H—Goodyear-Hawley type.
H—Hotchkiss.
Her—Hercules.
HS—Hall-Scott.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken-Detroit Axle Co.
Tw—Timken-Detroit—Westinghouse.
TW—Timken-Detroit—Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Wg—Wagner "hi-Tork"
Ws—Westinghouse.
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group
4R—Forward and rear units of Rear Axle Group.
—All wheels.

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.
D or Dp—Dual Primary

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry
c—Cast iron.
Cc—Composite Front, Cast Iron in rear.
Ce—Centrifuse.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.
Z—Reinforced (X) member frame, box type sections.

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
¾—Three Quarters Floating.
½—Semi-Floating
T—Torque Tube

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

GOVERNOR STANDARD

Y—Yes.
N—No.

(Turn to Page 86, Please)

(Continued from Page 85)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	Available																														
1	(c.o.e.)....200				15000	5500•	7.00/20D	8.25/20	Wau BM	6–3 5/8x4 1/4	263	5.9	173	78–2800	7–2 1/2x10 1/4	N	WG T9	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534	a	TX	.....	10x3x 1/4	T
2	(c.o.e.)....225				16500	6200•	7.50/20D	8.25/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 1/2x10 1/4	N	Fu 5A330	5	TimH100DPH	HF	R	** –6.80	Tim 32502H	L4IHV	344	584	a	TX	.....	10x3x 1/4	T
3	(c.o.e.)....250				20000	6400•	8.25/20D	9.00/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 1/2x10 1/4	N	Fu 5A330	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV	370	642	a	TX	.....	12x3x 1/4	T
4	(c.o.e.)....400				22000	6800•	9.00/20D	10.00/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 1/2x10 1/4	N	Fu 5A330	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV	370	642	a	TX	.....	12x3x 1/4	T
5	(c.o.e.)....500				23000	7500•	9.00/20D	10.00/20	Wau MZA	6–4 1/4x4 3/4	404	5.6	285	130–3000	7–2 1/2x12 1/2	Y	Fu 5F430	5	Tim L100DPH	HF	R	** –6.83	Tim 35000H	L4IHV	370	642	a	TX	.....	12x3x 1/4	T
6	(c.o.e.)....550				28000	8100•	10.00/20D	11.00/20	Wau MZA	6–4 1/4x4 3/4	404	5.6	285	130–3000	7–2 1/2x12 1/2	Y	Fu 5F430	5	Tim Q100DPH	HF	R	** –7.80	Tim 26452H	L4IHV	458	846	a	TX	.....	12x3x 1/4	T
7	(c.o.e.)..550 X				32000	9600•	10.00/20D	11.00/24	Wau MZA	6–4 1/4x4 3/4	404	5.6	285	130–3000	7–2 1/2x12 1/2	Y	Fu 5F430	5	Tim S200DPH	2F	R	** –7.84	Tim 26452H	L4IHV	576	1054	a	FD	.....	14x3x 1/4	T
8	(c.o.e.)....600				28000	10000•	10.00/20D	11.00/24	Wau 140 GK	6–4 1/2x5 1/2	525	6.4	425	172–2600	7–3 1/4x13 7/8	Y	Fu 5A650	5	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x 1/4	T
9	(c.o.e.)....601				28000	10900•	10.00/20D	11.00/24	Wau 145 GK	6–5 1/4x6	779	6.2	595	240–2400	7–3 1/2x17 3/4	Y	Spi 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x 1/4	T
10	(D) (c.o.e.)....602				28000	11200•	10.00/20D	11.00/24	Cum HB600	6–4 1/4x6	672	17.	500	150–1800	7–4 1/2x16 1/2	Y	Spi 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950	a	FD	.....	14x3x 1/4	T
11	Biederman...NSH		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 1/2	N	Fu 5A330	5	TimH700DPH	SF	H	** –7.2	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x 1/4	C
12	.....NSD		130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 1/2	N	Fu 5A330	5	TimH700DPH	2D	H	6.13–8.15	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x 1/4	C
13	.....NSR		142	171	21000	7420	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 1/2	N	Spi 3541UP	5	TimH110DPH	HFd	H	** –6.4	Tim 35141PX	T4A	.....	.....	G	T	.....	9x3x 1/4	C
14	.....HL		93	197	30000	12200	10.00/24D	12.00/24	Wau 140 GK	6–4 1/2x5 1/2	525	6.4	425	172–2600	7–3 1/4x13 7/8	Y	Spi 6252A	5	Tim R200	HFd	H	6.41–8.37	Tim 36000TW	T4A	.....	.....	G	T	81	10x3x 1/4	T
15	Brown....R6572T		144	166	33000	.....	11.00.22	12.00/24	Con R6572	6–4 3/4x5 3/4	572	5.9	440	172–2600	7–3 1/4x14 1/2	Y	Spi 6252B	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1/4	Tf
16	.....140GKT		144	166	33000	.....	11.00/.22	12.00/24	Wau 140GK	6–4 1/2x5 1/2	525	6.4	425	168–2400	7–2 3/4x13 7/8	Y	Spi 6252B	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1/4	Tf
17	(D).....HB600T		144	166	33000	.....	11.00/.22	12.00/24	Cum HB600	6–4 1/2x6	672	17.	500	150–1800	7–4 1/2x16 1/2	Y	Fu 5A650	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1/4	Tf
18	(D).....HRB600T		144	166	33000	.....	11.00/.22	12.00/24	Cum HRB600	6–5 1/4x6	743	15.	530	165–1800		Y	Fu 5A920	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1/4	Tf
19	(D).....NHB600T		144	166	33000	.....	11.00/.22	12.00/24	Cum NHB600	6–5 1/4x6	743	15.	575	200–2100		Y	Fu 5A920	5	Tim S200	2F	H	** –6.42	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1/4	Tf
20	Chevrolet.....GP	905	116	....	4600	.....	▼2560	6.00/16S	15S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦	N	Own	§3	Own	Hy ⅄	T	** –4.11	Own	O4IH	15	242	Co	2I	39	5 3/4x2 1/4x 1/4	C
21	.....GR	1000	125	....	♦5800	.....	▼2920	15S	7.00/17S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦	N	Own	§3	Own	HyF	H	†† –4.57	Own	O4IH	176	272	Co	2I	48 1/4	5 1/4 x2 1/4x 1/4	C
22	†Fwd. Control..GT	1015	125	....	♦7000	.....	▼2675	15S	7.00/17S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	172	90–3300	4– ♦ ♦	N	Own	§3	Own	HyF	H	** –5.14	Own	O4IH	202	302	Co	2I	.....	5 1/4 x2 1/4x 1/4	C
23	.....GS	1070	137	....	8800	.....	3195	7.00/17S	7.00/18	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I	60	7x2 3/4x 1/4	C
24	†Fwd. Control..GU	1105	137	....	10000	.....	▼2855	7.00/17S	7.00/18	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	172	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I	.....	7x2 1/4x 1/4	C
25	.....SJ	1130	137	....	12500	.....	▼3560	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60	7x2 1/4 x 1/4	C
26	.....SK	1165	161	....	12500	.....	▼3670	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦	N	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84	8 1/4x2 1/2x 1/4	C
27	(School bus)..SL	1310	161	....	12000	.....	▼4120	6.50/20D	7.00/20	O-Thrift Mas. ::	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I††	.....	8 1/4x2 1/2x 1/4	C
28	.....SVS	1450	137	....	15000	.....	▼4120	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60	8 1/4x2 1/2x 1/4	C
29	.....SWS	1485	161	....	15000	.....	▼4270	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84	8 1/4x2 1/2x 1/4	C
30	(c.o.e.).....SPS	•1805	110	....	15000	▼•	▼4665	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60 1/2	8 1/4x2 1/2x 1/4	C
31	(c.o.e.).....SRS	•1840	134	....	15000	▼•	▼4760	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84 1/2	8 1/4x2 1/2x 1/4	C
32	(c.o.e.).....SSS	•1875	158	....	15000	▼•	▼4830	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	108 1/2	8 1/4x2 1/2x 1/4	C
33	(c.o.e.).....SP	•1805	110	....	16000	▼•	▼4665	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60 1/2	8 1/4x2 1/2x 1/4	C
34	(c.o.e.).....SR	•1840	134	....	16000	▼•	▼4760	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84 1/2	8 1/4x2 1/2x 1/4	C
35	(c.o.e.).....SS	•1875	158	....	16000	▼•	▼4830	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	189	90–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	108 1/2	8 1/4x2 1/2x 1/4	C
36	.....SV	1450	137	....	16000	▼	▼4120	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60	8 1/4x2 1/2x 1/4	C
37	.....SW	1485	161	....	16000	▼	▼4270	7.50/20D	9.00/20¶	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84	8 1/4x2 1/2x 1/4	C
38	(School bus)..SX	1530	199	....	15000	▼	▼4615	7.50/20D	8.25/20	O-Load Mas.	6–3 1/8 x3 1/2	235	6.7	192	93–3100	4– ♦ ♦	Y	Own	4	Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I††	.....	8 1/4 x2 1/2x 1/4	C
39	Corbitt■.....18BG		181	....	18000	.....		9.00/20	10.00/20	Con M6330	6–4x4 3/4	330	6.1	246	104–2800	7–2 1/4x12	Y	Cla 205V	5	Tim H100DPH	....	H	**–5.29	Tim 32502H	B4IHV	.....	.....	a	TX	.....	8x3 1/4 x1/4	T
40	.....22BG		190	....	22000	.....		10.00/20	10.00/22	Con B6371	6–4 1/2x4 3/4	371	6.0	280	100–2600	7–2 1/2x13 1/2	Y	Fu 5A43	5	Tim L100DPH	....	H	**–5.29	Tim 35000H	B4IHV	.....	.....	a	TX	.....	8x3 1/4 x1/4	T
41	.....25BG		200	....	25000	.....		10.00/22	11.00/22	Con B6427	6–4 1/4x4 7/8	427	5.9	325	127–2600	7–2 1/4x13 1/2	Y	Fu 5A43	5	Tim Q100P	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8 1/4x3 3/4x 1/4	T
42	(T).....18TG		137	....	18000	.....		9.00/20	10.00/20	Con M6330	6–4x4 3/4	330	6.1	246	104–2800	7–2 1/4x12	Y	Cla 205V	5	Tim H100P‡‡	....	H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7 1/4x3 1/4x 1/4	T
43	(T).....H18TG		137	....	20000	.....		10.00/20	.....	Con M6330	6–4x4 3/4	330	6.1	246	104–2800	7–2 1/4x12	Y	Cla 205V	5	Tim L100P‡‡	....	H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7 1/4x3 1/4x 1/4	T
44	(T).....22TG		144	....	22000	.....		10.00/20	10.00/22	Con B6427	6–4 1/4x4 7/8	427	5.9	325	127–2600	7–2 1/4x13 1/2	Y	Fu 5A43	5	Tim L100P‡‡	....	H	**–5.29	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x1/4	T
45	(T).....H22TG		144	....	24000	.....		10.00/22	.....	Con B6427	6–4 1/4x4 7/8	427	5.9	325	127–2600	7–2 1/4x13 1/2	Y	Fu 5A43	5	Tim Q100P‡‡	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x1/4	T
46	(T).....25TG		148	....	25000	.....		10.00/22	11.00/22	Con R6513	6–4 1/2x5 3/8	513	5.9	400	170–2600	7–3 1/4 x—	Y	Spi 6253	5	Tim Q100P‡‡	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/4x3 3/4x 1/4	T
47	(T).....H25TG		148	....	25000	.....		10.00/22	.....	Con R6513	6–4 1/2x5 3/8	513	5.9	400	170–2600	7–3 1/4 x—	Y	Spi 6253	5	Tim R100P‡‡	....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/4x3 3/4x 1/4	T
48	(T).....28TG		147	....	28000	.....		10.00/22	11.00/24	Con R6602	6–4 1/2x5 3/8	602	5.9	484	199–2600	7–3 1/4 x—	Y	Fu 5A650	5	Tim S200P‡‡	....	H	**–6.42	Tim 26450TW	Ws4IA	.....	.....	a	2D	.....	8 1/4x3 3/4x 1/4	T
49	(D) (T).....22TD		144	....	22000	.....		10.00/20	10.00/22	Her DWXD	6–4 1/4x4 3/4	404	15	320	135–2600	.....	Y	Fu 5A430	5	Tim L300P	....	H	6.32–8.29	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x1/4	T
50	(D) (T)..H22TD		144	....	22000	.....		10.00/22	.....	Her DWXD	6–4 1/4x4 3/4	404	15	320	135–2600	.....	Y	Fu 5A430	5	Tim Q300P	....	H	6.53–8.53	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x1/4	T
51	(D) (T)..25TD		148	....	25000	.....		11.00/20	11.00/22	Her DRXC	6–4 1/2x5 1/4	529	14	400	148–2200	7–3 1/4x13 3/4	Y	Spi 6253	5	Tim Q300P	....	H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8 1/4x3 3/4x 1/4	T
52	(D) (T)..H25TD		148	....	25000	.....		10.00/22	.....	Her DRXC	6–4 1/2x5 1/4	529	14	400	148–2200	7–3 1/4x13 3/4	Y	Spi 6253	5	Tim R300P	....	H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8 1/4x3 3/4x 1/4	T
53	(D) (T)..27TD		152	....	27000	.....		10.00/22	11.00/24	Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim R300P	....	H	4.92–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8 1/4x3 3/4x 1/4	T
54	(D) (T)..H27TD		152	....	27000	.....		10.00/22	.....	Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim S200P‡‡	....	H	**–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8 1/4x3 3/4x 1/4	T
55	(D) (T)..28TD		155	....	28000	.....		10.00/22	11.00/24	Cum NHB600	6–5 1/4x6	743	15	575	200–2100	7–4 1/2x16 1/2	Y	Fu 5A920	5	Tim S200P‡‡	....	H	6.42	Tim 26450W	Ws4IA	.....	.....	a	2D	.....	8 1/4x3 3/4x 1/4	T
56	(T).....26TG		148		26000	.....		10.00/22	11.00/22	Con R660	6–4 1/2x5 1/2	602	5.9	484	199–2600	7–3 1/4 x—	Y	Fu 5A65	5	Tim R100P‡‡	....	H	** –5.29	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/2x3 1/4x 1/4	T
57	Crosley.....B		80	....	2130	1330°°	4.50/12	.....	.....	Own	4–2 1/2x2 1/4	44	7.8	33	26–5400	5–‡	..	WG-ASI-T92	3	Spi	2F	..	** –5.17	Own	G-H	♦♦♦	♦♦♦	C	2	.....	.....	C
58	Dodge.....B-2-B		108	108	4850	.....	6.00/16S	6.50/16S	Own T-172	6–3 1/4x4 1/2	217	6.6	172	96–3600	4–2 1/2x4.8	N	NP-88840	3	Own T172	H⅄	H	4.1 –4.78	Own T172	O4IH	175	264	cE	TX	40	1/2 x2 1/2 x6 1/2	C
59	.....B-2-C		116	116	5500	.....	7.00/16S	7.00/16S	Own T-174	6–3 1/4x4 1/2	217	6.6	172	96–3600	4–2 1/2x4.8	N	NP-88840	3	Own T174	H⅄	H	4.1 –4.78	Own T174	O4IH	184	277	Co	TX	48	1/2 x2 1/2 x6 1/2	C
60	.....B-2-D		116	126	8000	.....	6.00/16S△	6.00/20	Own T-176	6–3 1/4x4 1/2	230	6.7	187	102–3600	4–2 1/2x4.8	N	NP-88870	3	Own T176	HyF	H	3.9 –4.89	Own T176	O4IH	209	316	Co	TX	48	1/2 x2 1/2 x6 1/2	C
61	Rte.Van.B-1-DU		102	117	7900	.....	7.50/16S	8.25/16S	Own T-164	6–3 1/4x4 1/2	230	6.6	186	94–3200	4–2 1/2x4.8	N	NP-88490	3	Own T164	HyF	H	3.9 –4.89	Own T164	O4IH	209	316	Co	TX	.....	1/2 x2 1/2 x6 1/2	C
62	Rte.Van.B-1-EU		102	142	10100	.....	6.50/16S△	9.00/16S	Own T-165	6–3 1/4x4 1/2	230	6.6	186	94–3200	4–2 1/2x4.8	N	NP-88500	4	Own T165	HyF	H	4.89–5.8	Own T165	O4IH	234	355	Co	TX	.....	1/2 x2 1/2 x6 1/2	C
63	.....B-2-FL		128	152	9500	.....	6.00/20‡	6.50/20	Own T-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.04	N	NP-39760	4	Own T178	HyF	H	5.6 –6.8	Own T178	O4IH	336	479	...	TX	60	.21x2 3/4x7	C
64	.....B-2-F		128	170	13500	.....	6.00/20‡	8.25/20♦	Own T-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.04	N	NP-39760	4	Own T178	HyF	H	5.6 –6.8	Own T178	O4IH	336	479	...	TX	60	.21x2 3/4x7	C
65	.....B-2-FA		128	170	13500	.....	6.50/20‡	8.25/20♦	Own T-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.04	N	NP-39760	4	Own T178	SFd	H	5.83–8.11	Own T178	O4IH	336	479	...	TX	60	.21x3 3/4x7	C
66	.....B-2-G		128	192	14500	.....	6.50/20¶	8.25/20	Own TX-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.04	N	NP-88570	4	Own TX-178	HyF	H	5.6 –6.8	Own TX-178	O4IH	336	479	Co	TX	60	.21x2 3/4x8 1/2	C
67	.....B-2-GA		128	192	14500	.....	6.50/20¶	8.25/20	Own TX-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.04	N	NP-88570	4	Eat A5-1350	SFd	H	5.8 –8.3	Own TX-178	O4IH	336	479	Co	TX	60	.21x2 3/4x8 1/2	C
68	.....B-2-GM		107	161	14750	.....	6.50/20	8.25/20	Own TX-182	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2x5.04	N	NP-88850	4	Own TX-182	HyF	H	5.6 –6.8	Own TX-182	O4IH	336	479	Co	TX	60	.21x2 3/4x8 1/2	C

†—8.25/20 front tires are required when 9.00/20 dual rears are used.

••—Pick-up truck; panel delivery 1360.

‡‡—Two speed axles available.

△—Includes cab.

¶—Front only: Rear 9.00/20

(Turn to Page 88, Please)

::—Own Loadmaster engine available on models 8J-8K-8L at extra cost.

■—Chevrolet own rear axle (5.43:1) available on Models 8J-8K-8L. Chevrolet own 2-speed rear axle (6.13-8.10:1) available at extra cost on Models 8V8-8W8-8P-8P8-8R-8R8-8S-8S8-8V-8W-8X.

‡—Front only: Rear 6.50/20S.

♦—7.50/17 tire is optional for Rear or Front and Rear, with no increase in G.V.W.

▲—7.50/20 can be used on the front with no decrease in 15000 G. V. W. when 8.25/20 are used on dual rear wheels.

♦♦♦—Two moulded buttons per wheel—1 1/4" diameter, 5/8" thick.

†—Forward control Chassis for Door-to-Door delivery bodies. These chassis do not have cowl.

††—Also available in 5.14 ratio.

⅄—Front only: Rear 7.00/16S.

§—1 Front 1.375x1.312; 3 Center 1.375x.870; 1 Rear 1.500x1.499.

‖—4-speed transmission available.

■—Sleeper cab models available.

♦♦—Diameter: (Average) Front, 2.6858; Front Center, 2.7168; Rear Center, 2.7478; Rear, 2.7788; Total length, 5 1/8.

▼—Includes spare tire, full fuel tank and cooling system.

♦—For only single rear; Dual rear are 7.50/20.

••—Propeller shaft type available at extra cost.

Exide

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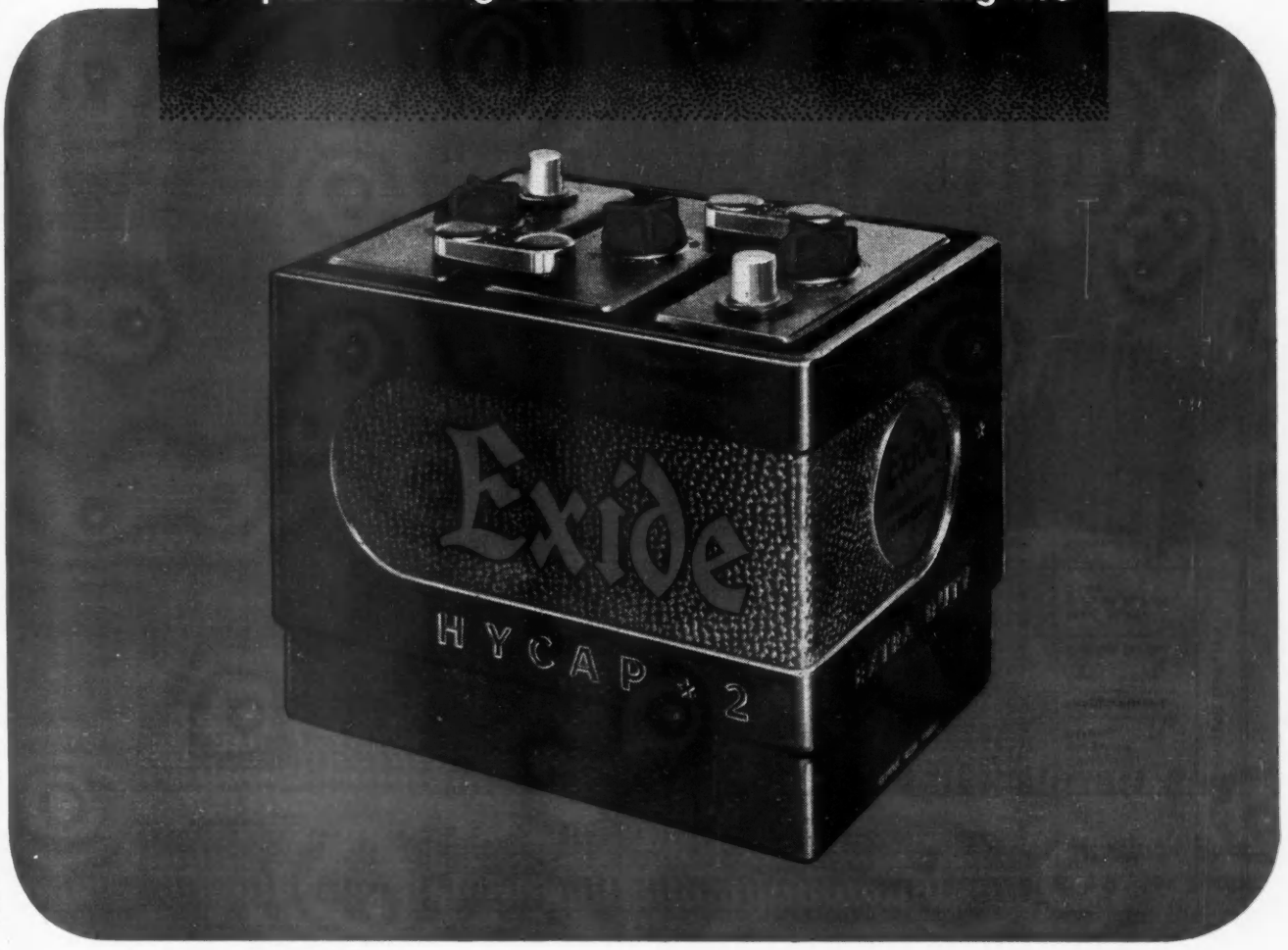
LOW COST PER MILE OF OPERATION

. . . plus starting assurance and extra long life



All its service-proved features continue to make Exide the outstanding battery for truck service.

1. Heavy, oversize plates
2. Greater capacity
3. Self-cleaning, non-spitting vent plugs
4. Double insulation between plates
5. "Bull's-Eye" electrolyte leveling device
6. Heavy inter-cell connectors
7. Hard rubber container
8. Positive cover seals

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(Continued from Page 86)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANS-MISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions *	Type
	Dodge—Cont'd.																														
1	B-2-GMA		107	161	14750		6.50/20	8.25/20	Own TX-182	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Eat A5-1350	SFd	H	5.8 –8.8	Own TX-182	O4IH	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
2	B-2-H		128	192	16000		7.50/20	8.25/20	Own T-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Own T-192	HyF	H	6.2 –6.8	Own TX-192	O41HV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
3	B-2-HA		128	192	16000		7.50/20	8.25/20	Own T-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Eat A5-1350	SFd	H	5.8 –8.8	Own T-192	O41HV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
4	B-2-HM		107	161	16250		7.50/20	8.25/20	Own T-194	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Own T-194	HyF	H	6.2 –6.8	Own T-194	O41HV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
5	B-2-HMA		107	161	16250		7.50/20	8.25/20	Own T-194	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Eat A5-1350	SFd	H	5.8 –8.8	Own T-194	O41HV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
6	B-2-HH		128	192	16000		7.50/20	8.25/20	Own T-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Own T-192	HyF	H	6.2 –6.8	Own T-192	O41HV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
7	B-2-HHA		128	192	16000		7.50/20	8.25/20	Own T-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Eat A5-1350	SFd	H	5.8 –8.8	Own T-192	O41HV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
8	B-2-HHM		107	161	16250		7.50/20	8.25/20	Own T-194	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Own T-194	HyF	H	6.2 –6.8	Own T-194	O41HV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
9	B-2-HHMA		107	161	16250		7.50/20	8.25/20	Own T-194	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88850	4	Eat A5-1350	SFd	H	5.8 –8.8	Own T-194	O41HV	336	479	Co	TX	60	.21x2 1/2 x8 1/2	C
10	B-2-JL		128	212	17000		6.50/20	8.25/20	Own T-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Own T-180	HyF	H	6.2 –7.16	Own T-180	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
11	B-2-JAL		128	212	17000		6.00/20	8.25/20	Own T-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Eat A5-1350	SFd	H	5.8 –8.8	Own T-180	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
12	B-2-J		128	212	17000		6.50/20	8.25/20	Own T-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Own T-180	HyF	H	6.2– 7.16	Own T-180	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
13	B-2-JA		128	212	17000		6.50/20	8.25/20	Own T-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Eat A5-1350	SFd	H	5.8 –8.8	Own T-180	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
14	B-2-JML		107	161	17250		6.00/20	8.25/20	Own T-184	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Own T-184	HyF	H	6.2 –7.16	Own T-184	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
15	B-2-JMAL		107	161	17250		6.00/20	8.25/20	Own T-184	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Eat A5-1350	SFd	H	5.8 –8.8	Own T-184	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
16	B-2-JM		107	161	17250		6.50/20	8.25/20	Own T-184	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Own T-184	HyF	H	6.2 –7.16	Own T-184	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
17	B-2-JMA		107	161	17250		6.50/20	8.25/20	Own T-184	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Eat A5-1350	SFd	H	5.8 –8.8	Own T-184	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
18	B-2-KAL		128	212	17500		8.25/20▲	9.00/20	Own TX-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Eat 1650	SFd	H	6.14–9.04	Own T-180	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
19	B-2-KL		128	212	17500		8.25/20	9.00/20	Own TX-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Tim H-101	SFd	H	6.8 –7.2	Own T-180	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
20	B-2-K		128	212	17500		8.25/20	9.00/20	Own TX-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Tim H-101	SFd	H	6.8 –7.2	Own T-180	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
21	B-2-KA		128	212	17500		8.25/20	9.00/20	Own TX-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Eat 1650	SFd	H	6.14–9.04	Own TX-180	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
22	B-2-KMAL		107	161	17750		8.25/20	9.00/20	Own TX-184	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Eat 1650	SFd	H	6.14–9.04	Own TX-184	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
23	B-2-KML		107	161	17750		8.25/20	9.00/20	Own TX-184	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Tim H-101	SFd	H	6.8 –7.2	Own TX-184	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
24	B-2-KM		107	161	17750		8.25/20	9.00/20	Own TX-184	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Tim H-101	SFd	H	6.8 –7.2	Own TX-184	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
25	B-2-KMA		107	161	17750		8.25/20	9.00/20	Own TX-184	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88920	5	Eat 1650	SFd	H	6.14–9.04	Own TX-184	O41HV	396	553	e	TX	60	1/2 x2 1/2 x8 1/2	P
26	B-2-R		130	229	19000		7.50/20	9.00/20	Own T-186	6–3 3/4 x4 5/8	306	6.4	245	122–3200	7–3x11.23	Y	NP-88220	5	Tim H-100	HyF	H	** –8.4	Own TX-186	O41HV	397	609	e	TX	60	1/2 x2 1/2 x9 1/2	P
27	B-2-RA		130	229	19000		7.50/20	9.00/20	Own T-186	6–3 3/4 x4 5/8	306	6.4	245	122–3200	7–3x11.23	Y	NP-88220	5	Tim H-300	SFd	H	6.14–8.15	Own T-186	O41HV	397	609	e	TX	60	1/2 x2 1/2 x9 1/2	P
28	B-2-T		130	190	21000		7.50/20△	10.00/20	Own T-188	6–3 1/2 x5	331	6.4	270	128–3000	7–3x11.23	Y	NP-88450	5	Tim L-100	HyF	H	6.8 –8.2	Own 32516A1	O41HV	425	666	e	TX	60	1/4 x3x10	P
29	B-2-TA		130	190	21000		7.50/20△	10.00/20	Own T-188	6–3 3/4 x5	331	6.4	270	128–3000	7–3x11.23	Y	NP-88450	5	Tim L-300	SFd	H	6.3 –9.18	Tim 32516A1	O41HV	425	666	e	TX	60	1/4 x3x10	P
30	B-2-V		130	190	23000		9.00/20†	11.00/20	Own TX-188	6–3 1/2 x5	331	6.4	270	128–3000	7–3x11.23	Y	NP-88450	5	Tim Q-100	HyF	H	6.8 –7.8	Tim 35020nx9	O41HV	486	770	e	TX	60	1/4 x3x10	P
31	B-2-VA		130	190	23000		9.00/20†	11.00/20	Own TX-188	6–3 3/4 x5	331	6.4	270	128–3000	7–3x11.23	Y	NP-88450	5	Tim Q-300	SFd	H	6.5 –9.5	Tim 35020nx9	O41HV	486	770	e	TX	60	1/4 x3x10	P
	School Buses																														
32	B-2-FS		152	170	13500		6.50/20	7.50/20	Own TS-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	N	NP-39760	4	Own TS-178	HyF	H	5.6 –6.8	Own TX-178	O41HV	336	479	Co	TX		1/4 x2 1/2 x7 1/2	C
33	B-2-GS		192	192	15000		7.50/20	7.50/20-10	Own TXS-178	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	N	NP-88570	4	Own TX-178	HyF	H	5.6 –6.8	Own TXS-178	O41HV	336	479	Co	TX		1/4 x2 1/2 x8 1/2	C
34	B2-HHS		192	192	15500		7.50/20	8.25/20	Own TS-192	6–3 1/8 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.04	Y	NP-88570	4	Own TS-192	HyF	H	6.2 –6.8	Own TS-192	O41HV	336	479	Co	TX		.21x2 1/2 x8 1/2	C
35	B-2-JS		212	212	17000		7.50/20	8.25/20	Own TS-180	6–3 1/8 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.04	Y	NP-88700	5	Own TS-190	HyF	H	6.2 –7.16	Own TS-180	O41HV	396	553	e	TX		1/2 x2 1/2 x8 1/2	P
36	B-2-RS		229	229	19000		8.25/20	9.00/20	Own TS-186	6–3 3/4 x4 5/8	306	6.4	245	122–3200	7–3x11.2	Y	NP-88220	5	Tim H100	HyF	H	6.8	Own T-186	O41HV	397	609	e	TX		1/2 x2 1/2 x9 1/2	P
	Duplex T		136	220	18000	6600	8.25/20D	9.00/20	Her JXD	6–4x4 1/4	320	6.2	240	113–3000	7–2 1/2 x10 1/2	Y	Fu 5B330	5	Tim H100	B	H	** –7.20	Tim 32502	L4IHV	420	654	A	TX	57 1/2	9 1/2 x3 1/2 x7/8	C
37	TH-404		136	220	18000	6900	8.25/20D	9.00/20	Her WXLC3	6–4 1/4 x4 3/4	404	5.8	312	139–2600	7–2 5/8 x13 1/4	Y	Fu 5A430	5	Tim H-300	DF	H	6.13–8.15	Tim 32502	L4IHV	420	654	A	TX	49 1/2	9 1/2 x3 1/2 x7/8	C
38	R		136	220	25000	8820	9.00/20D	10.00/20	Her WXLC-3	6–4 1/4 x4 3/4	404	5.8	312	139–2600	7–2 5/8 x13 1/4	Y	Fu 5A43	5	Tim Q300	DF	R	6.53–8.53	Tim 35100	L4IHV	730	1016	A	TX	49 1/2	9 1/2 x3 1/2 x7/8	C
39	SH-501		172	208	27000	9500	10.00/20	11.00/20	Her RXB	6–4 1/2 x5 1/4	501	5.4	360	137–2400	7–3x13 1/4	Y	Fu 5A620		Tim Q200	2F	R	** –7.77	Tim 35100	BW4IA	730	1016	A	TX	61 1/2	9 1/2 x3 1/2 x7/8	C
40	JHA		148	220	28000	9800	10.00/20D	11.00/20	Her RXB	6–4 1/2 x5 1/4	501	5.4	360	137–2400	7–3x13 1/4	Y	Fu 5A620	5	Tim S200	2F	R	** –9.83	Tim 26450	BW4IA	912	1311	A	TX	61 1/4	10 1/2 x3 1/2 x7/8	C
41	JH-558		148	220	28000	9800	10.00/20D	11.00/20	Her RXLD	6–4 3/4 x5 1/4	558	6.3	430	154–2400	7–3 1/2 x13 1/4	Y	Fu-5A650	5	Tim S-300	DF	R	6.53–8.53	Tim 26450	BW4IA	912	1311	A	TX	60 3/4	10 1/2 x3 1/2 x7/8	C
42	KHA		148	220	32000	10500	11.00/20D	11.00/20	Her RXC	6–4 3/4 x5 1/4	529	5.4	395	132–2300	7–3x13 1/4	Y	Fu 5A620	5	Tim U-200	2F	R	** –9.83	Tim 26450	BW4IA	912	1311	A	TX	60 1/4	10 1/2 x3 1/2 x7/8	C
43	L		148	220	37000	11300	11.00/20D	11.00/20	Her RXLD	6–4 3/4 x5 1/4	558	5.4	430	154–2400	7–3 1/2 x13 1/4	Y	Fu 5C650	5	Tim U-200	2F	R	** –9.83	Tim 26450	BW4IA	912	1311	A	TX	60 1/4	10 1/2 x3 1/2 x7/8	C
44	Federal 15M		135	194	14500	4080	6.50/20D	7.50/20	Here JXEF	6–3 1/2 x4 1/2	245	...	184	93–3400	7–2 1/2 x10 1/2	N	WGT9A	4	T53547DPH	BF	H	5.66	Tim 30000H X	L4IHV	310	482	a	TX	56	8 1/2 x2 1/4 x1/4	T
45	16M		139	250	15500	4460	7.50/20D	7.50/20	Her JXEF	6–3 1/2 x4 1/2	245	...	184	93–3400	7–2 1/2 x10 1/2	N	WG T9A	4	T 53547DPH	BF	H	** –5.66	Tim 30000HX	L4IHV	310	482	a	TX	60	8 1/2 x2 1/4 x1/2	T
46	16M2		139	250	15500	4590	7.50/20D	8.25/20D	Her JXEF	6–3 1/2 x4 1/2	245	...	184	93–3400	7–2 1/2 x10 1/2	N	WG T9A	4	TimE300DPH	dF	H	6.13–8.10	Tim 30000HX	L4IHV	310	482	a	TX	60	8 1/2 x2 1/4 x1/2	T
47	18M		139	250	17000	4700	8.25/20D	8.25/20	Her JXBF	6–3 3/4 x4 1/4	263	...	192	98–3200	7–2 1/2 x10 1/2	N	WG T9A	5	TimF300DPH	8F	H	** –6.80	Tim 30003H	LT4IHV	314	532	a	TX	60	8 1/2 x2 1/2 x1/2	T
48	18M2		139	250	17000	4830	8.25/20D	8.25/20	Her JXBF	6–3 3/4 x4 1/4	263	...	192	98–3200	7–2 1/2 x10 1/2	N	WG T9A	5	TimE300DPH	dF	H	6.13–8.10	Tim 30003H	LT4IHV	314	532	a	TX	60	8 1/2 x2 1/2 x1/2	T
49	25M		139	250	19000	4950	8.25/20D	9.00/20	Her JXCF	6–3 3/4 x4 1/2	282	...	212	103–3200	7–2 1/2 x10 1/2	N	Cla 205VO	5	TimH100DPH	8F	H	** –6.80	Tim 3100H	LT4IHV	346	583	a	TX	60	8 1/2 x2 1/2 x1/2	T
50	25M2		139	250	19000	5100	8.25/20D	9.00/20	Her JXCF	6–3 3/4 x4 1/2	282	...	212	103–3200	7–2 1/2 x10 1/2	N	Cla 205VO	5	TimH300DPH	dF	H	6.13–8.15	Tim 3100H	LT4IHV	346	583	a	TX	60	8 1/2 x2 1/2 x1/2	T
51	29M		139	250	21500	5500	9.00/20D	10.00/20	Her JXDF	6–4x4 1/2	320	...	250	115–3100	7–2 1/2 x10 1/2	Y	Cla 205V	5	TimL100DPH	8F	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/2 x2 1/2 x1/2	T
52	29M2		139	250	21500	5690	9.00/20D	10.00/20	Her JXDF	6–4x4 1/2	320	...	250	115–3100	7–2 1/2 x10 1/2	Y	Cla 205V	10	TimL300DPH	dF	H	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/2 x2 1/2 x1/2	T
53	29MA		155	250	21500	5950	9.00/20D	10.00/20	Her JXDF	6–4x4 1/2	320	...	250	115–3100	7–2 1/2 x10 1/2	Y	Cla 205V▲	15	TimL100DPH	8F	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8 1/2 x2 1/2 x1/2	T
54	29ML		139	250	21500	5535	9.00/20D	10.00/20	Here JXLDF	6–4x4 1/2	339	...	272	131–3200	7–2 1/2 x10 1/2	Y	Cla 205V	5	TimL100DPH	8F	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/2 x2 1/2 x1/2	T
55	29ML2		139	250	21500	5725	9.00/20D	10.00/20	Here JXLDF	6–4x4 1/2	339	...	272	131–3200	7–2 1/2 x10 1/2	Y	Cla 205V	10	TimL300DPH	dF	H	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/2 x2 1/2 x1/2	T
56	29MLA		155	250	21500	5985	9.00/20D	10.00/20	Here JXLDF	6–4x4 1/2	339	...	272	131–3200	7–2 1/2 x10 1/2	Y	Cla 205V	15	TimL100DPH	8F	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8 1/2 x2 1/2 x1/2	T
57	35M		143	203	22500	6925	9.00/20D	10.00/20	Con T6371F	6–4 1/2 x4 5/8	371	...	290	140–3000	7–2 1/2 x13 1/2	Y	Cla 290VO	5	TimL100DPH	8F	R	**–6.83	Tim 32514H	LT4IHV	466	820	a	TX	60 1/2	10 1/2 x3 1/2 x1/2	T
58	35M2		143	203	22500	7115	9.00/20D	10.00/20	Con T6371F	6–4 1/2 x4 5/8	371	...	290	140–3000	7–2 1/2 x13 1/2	Y	Cla 290VO	10	TimL300DPH	dF	R	6.53–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60 1/2	10 1/2 x3 1/2 x1/2	T
59	45M		143	203	26000	8005	10.00/20D	10.00/24	Con T6427F	6–4 1/4 x4 7/8	427	...	347	158–2800	7–2 1/2 x13 1/2	Y	Cla 290VO	5	TimQ100P	8F	R	**–6.83	Tim 35011TW	TW4IA	606	933	a	TD	60 1/2	10 1/2 x3 1/2 x1/2	T
60	45M2		143	203	26000	8380	10.00/20D	10.00/24	Con T6427F	6–4 1/4 x4 7/8	427	...	347	158–2800	7–2 1/2 x13 1/2	Y	Cla 290VO	10	TimQ300P	dF	R	6.53–8.53	Tim 35011TW	TW4IA	606	933	a	TD	60 1/2	10 1/2 x3 1/2 x1/2	T
61	55M2		143	203	30000	8635	11.00/22D	11.00/24	Con T6427F	6–4 1/4 x4 7/8	427	...	347	158–2800	7–2 1/2 x13 1/2	Y	Cla 290VO	10	TimS300P	HyF	R	6.53–8.53	Tim 36021TW	Tw4IA	722	1051	a	TD	60 1/2	10 1/2 x3 1/2 x1/2	T
62	55MA		155	203	30000	8765	11.00/22D	11.00/24	Con T6427F	6–4 1/4 x4 7/8	427	...	347	158–2800	7–2 1/2 x13 1/2	Y	Cla 290V▲	15	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72 1/2	10 1/2 x3 1/2 x1/2	T
63	60M		155	203	32000	9600	11.00/22D	11.00/24	Con 22RF	6–4 1/2 x5 1/4	501	...	385	148–2400	7–2 1/4 x14 1/2	Y	Fu 5A65§	5	Tim S200P	2F	R	** –7.08	Tim 36021TW	Tw4IA	722	1051	a	FX	72 1/2	10 1/2 x3 1/2 x1/2	T
64	60M2		143	203	32000	9370	11.00/22D	11.00/24	Con 22RF	6–4 1/2 x5 1/4	501	...	385	148–2400	7–2 1/4 x14 1/2	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53–8.53	Tim 36021TW	Tw4IA	722	1051	a	TX	60 1/2	10 1/4 x3 1/2 x1/2	T
65	65M2		141	201	33000	9995	11.00/22D	11.00/24	Con R6602F	6–4 3/4 x5 1/2	602	...	466	200–2600	7–3 1/4 x14 1/2	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53–8.53	Tim 36000TW	Ws4IA	722	1051	a	TX	60 1/2	10 1/4 x3 1/2 x1/2	T
66	65MA		153	201	33000	10225	11.00/22D	11.00/24	Con R6602F	6–4 1/2 x5 1/2	602	...	466	205–3000	7–3 1/4 x14 1/2	Y	Fu 5A65§	15	Tim S200P	HyF	R	** –7.08	Tim 36000TW	Ws4IA	722	1051	a	TX	72 1/2	10 1/4 x3 1/2 x1/2	T
	Ford F-1																														
67	Cowl....9HC-84	930	114	114	4700	2226	6.00/16-4	6.50/16-6S	Own 7HC	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x5.0	N	Own 21C	3	Own 8C	H½	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2 1/4 x15/16	T
68	Cowl....9RC-84	960	114	114	4700	2266	6.00/16-4	6.50/16-6S	Own 8RC	8–3 1/8 x3 1/4	239	6.8	180	100–3800	3–2.49x5.2	N	Own 21C	3	Own 8C	H½	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2 1/4 x15/16	T
	F-2																														
69	Cowl....9HD-84	1045	122	122	5700	2616	6.50/16-6	7.50/16-6S	Own 7HD	6–3.3x4.4	226	6.8	180	95–3300	4–2.87x5.0	N	Own 51Y	4	Own 8D	8F	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2 1/4 x.19	T
70	Cowl....9RD-84	1075	122	122	5700	2656	6.50/16-6	7.50/16-6S	Own 8RD	8–3 1/8 x3 1/4	239	6.8	180	100–3800	3–2.49x5.2	N	Own 51Y	4	Own 8D	8F	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2 1/4 x.19	T

(Turn to Page 90, Please)

†—Front only; Rear 10.00/20.
△—Front only; Rear 8.25/20.

•—For shorter wheelbases—10x3 1/2 x1/4.
‡—Auxiliary trans. Spicer 6231B, three forward speeds.

§—Auxiliary trans. Spicer 7031, three forward speeds.
††—Front only; Rear 8.25/16.
▲—Front only; Rear 9.00/20-10.

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There's only one *Aero-type* Spark Plug

for Cars, Trucks and Tractors

Built to Aircraft Standards
With an Aircraft Insulator
Performance Rated like Aircraft Plugs

Hastings Aero-type Spark Plugs actually give aircraft performance in cars, trucks or tractors.

They are built to the standards which give fighter planes and superforts long and trouble-free plug life.

They have the same insulator—H.T. Aluminum Oxide—as the finest aircraft plugs.

And they are Performance Rated by the same tests given by airplane engine manufacturers.

In addition, each and every Hastings Spark Plug is X-Ray Tested for uniformity, for proper construction and heat flow. Each has the new wider gap setting which gives *full-range* ignition —correct firing at high and low speeds.

• • •

Here, at last, is a truly fine spark plug—one which will improve engine performance, give longer life and trouble-free service.

SPARK PLUG DIVISION, HASTINGS MANUFACTURING CO., HASTINGS, MICHIGAN

$1.25 and worth it!

If Hastings Spark Plugs are not yet available in your territory, write direct for illustrated catalog. Distribution is being developed as rapidly as possible—your jobber will be able to supply you soon.

(Continued from Page 88)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive & Torque Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
	Ford, Continued																													
	F-3																													
1	Cowl....9HY-84	1120	122	122	6800	2849	7.00/17-6	8 7.50/17-8	8 Own 7HY	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 51Y	4	Own 8Y	8F	H ** -4.86	Own 8RD	O4IH	188	308	Co	M2	48.06	6x2¼x.19	T
2	Cowl....9RY-84	1150	122	122	6800	2889	7.00/17-6	8 7.50/17-8	8 Own 8RY	8-3 1/16x3¾	229	6.8	180	100-3800	3-2.49x5.2	N	Own 51Y	4	Own 8Y	8F	H ** -4.86	Own 8RD	O4IH	188	308	Co	M2	48.06	6x2¼x.19	T
	F-3 Parcel Dlvy.																													
3	w/s.....9HJ	1375	104	104	7800	3030	7.00/16-6	7.50/17-8	8 Own 8HJ	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 8J	3	Own 8J	8F	H ** -4.86	Own 8J	O4IH	215	330	C	TX	82†	6x2¼x.19	T
4	w/s.....9H2J	1390	122	122	7800	3100	7.00/16-6	7.50/17-8	8 Own 8HJ	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.2	N	Own 8J	3	Own 8J	8F	H ** -4.86	Own 8J	O4IH	215	330	C	TX	100†	6x2¼x.19	T
	F-4																													
5	Cowl...9HTL-84	1175	134	134	10000	3457	7.00/20-8	8 7.00/18-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-5.83	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2¼x.21	T
6	Cowl...9RTL-84	1205	134	134	10000	3497	7.00/20-8	8 7.00/18-8	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-5.83	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2¼x.21	T
	F-5																													
7	Cowl....9HT-84	1220	134	134	14000	3646	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¼x.21	T
8	Cowl....9RT-84	1250	134	134	14000	3686	6.50/20-6	7.50/20-8	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¼x.21	T
9	Cowl...9H8T-84	1250	158	158	14000	3796	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	84.06	7x2¼x.21●	TL
10	Cowl...9R8T-84	1280	158	158	14000	3836	6.50/20-6	7.50/20-8	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	84.06	7-2¼x.21●	LT
11	Cowl...9H6T-84	.....	176	176	14000	3926	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	102.27	7.08x2.79x½●	TL●
12	Cowl...9R6T-84	.....	176	176	14000	3966	6.50/20-6	7.50/20-8	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	102.27	7.08x2.79x½	TL●
	F-5 C.O.E.																													
13	Cab...9HOW-81	1605	110	110	14000	4346	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¼x.21●	TL
14	Cab...9ROW-81	1635	110	110	14000	4386	6.50/20-6	7.50/20-8	Own 8RW	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¼x.21●	TL
15	Cab...9HW-81	1635	134	134	14000	4476	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x●●	TL
16	Cab...9RW-81	1665	134	134	14000	4516	6.50/20-6	7.50/20-8	Own 8RW	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x●●	TL
17	Cab...9H8W-81	1665	158	158	14000	4546	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x●●	TL
18	Cab...9R8W-81	1695	158	158	14000	4586	6.50/20-6	7.50/20-8	Own 8RW	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x●●	TL
	F-5 School Bus																													
19	Bus Cl..9H8T-84	1315	158	158	12000	3755	6.50/20-6	7.00/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	128†	7x2¼x.21●	TL
20	Bus Cl..9R8T-84	1345	158	158	12000	3795	6.50/20-6	7.00/20-8	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	128†	7x2¼x.21●	TL
21	Bus Cl..9H4T-84	1530	194	194	15000	4260	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H 5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	164†	7.08x2.8x●●	TL
22	Bus Cl..9R4T-84	1560	194	194	15000	4300	7.50/20-8	8.25/20-10	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H 5.14-5.67	Own 7RTH	O4IH	302	506	Co	TX	164†	7.08x2.8x●●	TL
	F-6																													
23	Cowl...9HTH-84	1610	134	134	15500	3976	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x●●	TL
24	Cowl...9RTH-84	1640	134	134	15500	4019	7.50/20-8	8.25/20-10	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x●●	TL
25	Cowl..9MTH-84	.....	134	134	15500	4024	7.50/20-8	8.25/20-10	Own 8MTH	6-3.5x4.4	254	6.8	212	110-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x●●	TL
26	Cowl.9H8TH-84	1640	158	158	15500	4049	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x●●	TL
27	Cowl.9M8TH-84	.....	158	158	15500	4074	7.50/20-8	8.25/20-10	Own 8MTH	6-3.5x4.4	254	6.8	212	110-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x●●	TL
28	Cowl..9R8TH-84	1670	158	158	15500	4089	7.50/20-8	8.25/20-10	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x●●	TL
29	Cowl.9M6TH-84	.....	176	176	15500	4154	7.50/20-8	8.25/20-10	Own 8MTH	6-3.5x4.4	254	6.8	212	110-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	102.3	7.08x2.8x●●	TL
30	Cowl.9H6TH-84	.....	176	176	15500	4129	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	102.3	7.08x2.8x●●	TL
31	Cowl.9R6TH-84	.....	176	176	15500	4169	7.50/20-8	8.25/20-10	Own 8RT	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	102.3	7.08x2.8x●●	TL
	F-6 C.O.E.																													
32	Cab.9HOWH-81	1990	110	110	16000	4549	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¼x.21●	TL
33	Cab.9ROWH-81	2020	110	110	16000	4589	7.50/20-8	8.25/20-10	Own 8RW	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¼x.21●	TL
34	Cab.9MOWH-81	.....	110	110	16000	4574	7.50/20-8	8.25/20-10	Own 8MWH	6-3.5x4.4	254	6.8	210	106-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¼x.21●	TL
35	Cab...9HWH-81	2020	134	134	16000	4679	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x●●	TL
36	Cab...9RWH-81	2050	134	134	16000	4719	7.50/20-8	8.25/20-10	Own 8RW	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x●●	TL
37	Cab..9MWH-81	.....	134	134	16000	4704	7.50/20-8	8.25/20-10	Own 8MWH	6-3.5x4.4	254	6.8	210	106-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x●●	TL
38	Cab..9H8WH-81	2050	158	158	16000	4749	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x●●	TL
39	Cab..9R8WH-81	2080	158	158	16000	4789	7.50/20-8	8.25/20-10	Own 8RW	8-3 1/16x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x●●	TL
40	Cab..9M8WH-81	.....	158	158	16000	4774	7.50/20-8	8.25/20-10	Own 8MWH	6-3.5x4.4	254	6.8	210	106-3400	4-2.87x5.0	Y	Own 8MTH	4	Own 8TH	Hy	H 6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x●●	TL
	F-7																													
41	Cowl....9EQ-84	2685	135	135	19000	5478	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H ** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	61.06	9x3x.25†	T
42	Cowl...9E7Q-84	.....	147	147	19000	5528	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H ** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	73.06	9x3x.25†	T
43	Cowl...9E9Q-84	2735	159	159	19000	5648	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H ** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	85.06	9x3x.25†	T
44	Cowl...9E8Q-84	.....	178	178	19000	5748	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H ** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	104.1	9x3x.25†	T
45	Cowl...9E5Q-84	2785	195	195	19000	5808	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H ** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	121.1	9x3x.25†	T
	F-8																													
46	Cowl...9EQH-84	3155	135	135	21500	5934	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H ** -7.17	Own 7EQ	O4IHV	485	729	C	TX	61.06	9x3x.25†	T
47	Cowl..9E7QH-84	.....	147	147	21500	5984	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H ** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	73.06	9x3x.25†	T
48	Cowl..9E9QH-84	3205	159	159	21500	6224	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H ** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	85.06	9x3x.25†	T
49	Cowl..9E8QH-84	.....	178	178	21500	6124	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H ** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	104.1	9x3x.25†	T
50	Cowl..9E5QH-84	3255	195	195	21500	6284	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4⅛	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	SF	H ** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	121.1	9x3x.25†	T
51	Intern'l (2)...KB-1	960	113	125	4400	2250	6.00/16-4	7.00/16	Own GRD214	6-3 1/16x4½	213	6.3	160	82-3400	4-2⅝x6‡‡	N	Own HDS-B	3	Own R1050	S½	H 3.72-5.11	Own F50	L41H	164	316	e	FX	38	6x2¼x½	T
52	.....KB-1M	875	102	113	5000	2150	6.00/16-4	6.50/16-6	Own GRD214	6-3 1/16x4½	213	6.3	160	82-3400	4-2⅝x6‡‡	N	O SA-HDS-B	3	Own R1050	S½	H 3.72-5.11	Own F150	L41H	164	316	e	FX	.....	6½x2¼x‡‡	T
53	.....KB-2	1010	125	125	5200	2285	6.00/16-4	7.00/16-6	Own GRD214	6-3 1/16x4½	213	6.3	160	82-3400	4-2⅝x6‡‡	N	Own HDS-B	3	Own R1050	S½	H 3.72-5.11	Own F50	L41H	164	316	e	FX	50	6 1/16x2¼x 1/16	T
54	.....KB-3	1150	130	...	6650	3000	7.00/16-6	7.50/16-6	Own GRD214	6-3 1/16x4½	213	6.3	160	82-3400	4-2⅝x6‡‡	N	Own HDS-B	3	Own R1150	SF	H 4.22-5.28	Own F150	L41H	195	367	e	FX	55	6½x2 1/16x‡‡	T
55	.....KB-3M	1050	102	113	7000	2585	7.00/16-6	7.50/16-8	Own GRD214	6-3 1/16x4½	213	6.3	160	82-3400	4-2⅝x6‡‡	N	Own H41B	4	Own R1150	SF	H 4.22-5.28	Own F150	L41H	221	367	e	FX	.....	6½x2¼x‡‡	T
56	(a).....KB-5	1320	135	177	15000	3705	6.50/20D	8.25/20	O-GRD 233	6-3 1/16x4½	233	6.3	181	93-3400	4-2⅝x6‡‡	N	Own H41B	4	Own R1360	SF	H 5.28-7.16	Own F350	LH41H	294	509	e	FX	60	8x3x 1/16	T
57	(a).....KB-6	1775	134	176	15900	4625	7.00/20D	8.25/20	Own BLD250	6-3 1/16x4½	251	6.3	200	100-3200	4-2⅝x4‡‡	N	Own WT97A	5	Own R1560	SF	H 5.62-7.16	Own 16F470	LH41HV	305	539	e	FX	60	8¼x3x 1/16	T
58	(a).....KB-7	2350	134	176	18000	5055	7.50/20D	9.00/20	O-BLD 269	6-3 1/16x4½	269	6.3	222	100-3000	4-2.7x4‡‡	N	Own F51	5	Own R1560	SF	H 6.50-7.16	Own F470	LH41HV	368	633	e	FX	60	8¼x3x 1/16	T
59	(a).....KB-8	3400	137	197	22000	6580	9.00/20D	10.00/24	O-RED 361	6-4½x4½	361	6.3	282	126-3000	7-3¼x10‡‡	Y	Own F51	5	Own R1572	SF	H 6.43-8.51	Own F553	LH41HV	407	709	e	FX	60	8¼x3½x 1/16	T
60	(a).....KB-10	4150	149	197	25000	7405	10.00/20D	11.00/24	Own RED401	6-4½x5	401	6.3	318	140-2800	7-3¼x10‡‡	Y	Own F52	5	Own R1676	SF	H 6.43-8.05	Own F653	LH41HV	484	829	e	FX	72	9½x3½x 1/16	T
61	(a).....KB-11	5600	149	197	30000	8430	10.00/20D	12.00/24	O-RED 450	6-4½x5	450	6.3	361	148-2600	7-3¼x10‡‡	Y	Own F54	5	Tim R100	Hy	H 6.42-8 05	Own F750	WW41A	746	1030	G	FX	72	10x3½x 1/16	T
62	(a).....KB-12	6530	155	215	31500	9175	11.00/20	12.00/20	O-Con. R6586	6-4½x5½	586	6.0	475	200-2600	7-3¼x13 1/16	Y	Own F55	5	Tim R100	Hy	H ** -6.42	Own F750	BW41A	746	....	G8	FX	66	10x3½x 1/16	C
63	(a).....KBR-14	7150	161	215	35000	10100	11.00/20	12.00/24	O-Con. R6586	6-4½x5½	586	6.0	475	200-2600	7-3¼x13 1/16	Y	Own F55B	5	Tim U200P	2F	H ** -7.08	Own F750	BW41A	746	....	G8	FX	72	10x3½x 1/16	C
64	.....W-3042-L	9900	179	227	30000	12530	10.00/20	11.00/22	Cum HB600	6-4⅞x6	672	17	492	150-1800	7-4½x....	Y	Spi 7741	4	Tim R-100	Hy	H ** -6.42	Own S6303	BW41A	690	....	G	FX	84	10x3½x 1/16	C
65	.....W-4042-OH	11250	170	230	40000	13115	10.00/20	14.00/24	Cum HB600	6-4⅞x6	672	17	492	150-1800	7-4½x....	Y	Spi 7741	4	Tim 79750PA	2F	H 7.69-11.36	Own 82F	BW41A	656	....	G	FX	72	10x3½x 1/16	C

(Turn to Page 92, Please)

†—Cowl to axle.
■—Air brake equipment optional on F-8, Front 16x2¼, Rear 16½x5½.

●—Reinforcement 6.58x2.21x.125 extended to include front spring rear brackets and rear spring front bracket.
†—Reinforcement 8.5x2.56x.15 starts at front spring rear brackets and ends behind rear spring front brackets.

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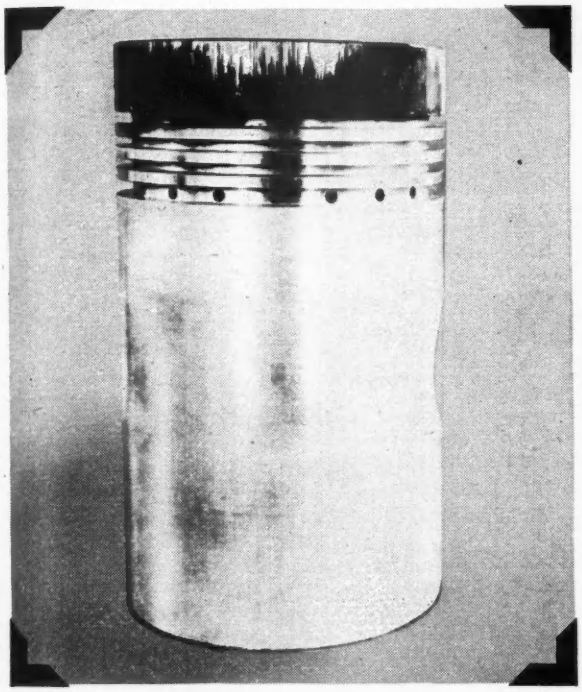
STANDARD ENGINEER'S REPORT

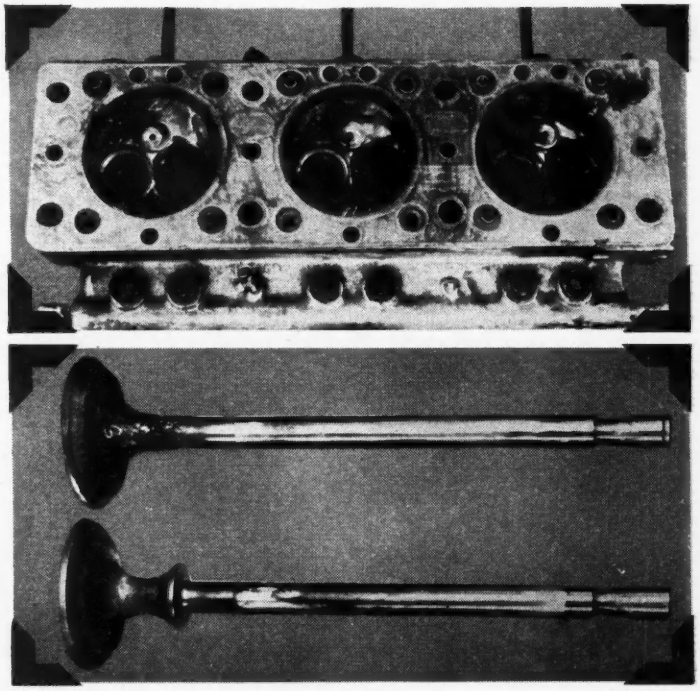
RPM DELO

TEST DATA

LUBRICANT	RPM Delo Supercharged Lub. Oil
UNIT	Caterpillar Diesel - D13000 5¾×8"
CONDITIONS	Cont. high load - Pumping water
FUEL	Regular commercial Diesel fuel
TEST PERIOD	4 Months
LOCATION	Coolidge, Arizona

CYLINDER WEAR REDUCED 75% BY NEW LUBRICATING OIL





RPM DELO SUPERCHARGED LUBRICATING OIL held cylinder wear to 0.0007 inches per 1000 hours in a stationary Diesel where ordinary heavy-duty type oil had allowed over four times more wear, or 0.0031 inches. The piston, head, and valves above, photographed after they had operated in the engine 965 hours under severely accelerated conditions on RPM DELO Supercharged, are typical of the excellent condition of parts and cleanliness maintained throughout the engine by this newly developed oil. All piston skirts were varnish-free, all oil-return holes open. Average ring-gap increase per 1000 hours was reduced from 0.01625 inches to 0.00350 by the use of RPM DELO Supercharged Lubricating Oil.

REMARKS: This new product in the RPM DELO line is specially compounded to solve ring-sticking, deposit formation, and excessive wear problems in Diesel engines operating in extra hard service. Many field tests have proved it to be particularly valuable where continuous high loads or high-sulphur content Diesel Fuels cause these conditions.

In the test reported here, the engine ran the full 965 hours at approximately 90% of governed full load engine rating. Drain periods were extended to 240 hours, however all 24 piston rings remained free, no troublesome deposits formed in the ring belt or on other parts, and oil compound depletion was negligible.

Besides providing unusual resistance to oxidation, the compounds in RPM DELO Supercharged Lubricating Oil clean existing gum and lacquer from parts, prevent internal rusting and bearing corrosion and stop oil foaming.

STANDARD OIL COMPANY OF CALIFORNIA • San Francisco
THE CALIFORNIA OIL COMPANY • Barber, N.J., Chicago, New Orleans
STANDARD OIL COMPANY OF TEXAS • El Paso, Texas
THE CALIFORNIA COMPANY • Denver, Colorado

(Continued from Page 90)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Intern'l. Con't. School Buses																														
1	KB-5	1440	195	....	15000	3935	6.50/20D	8.25/20	Own GRD233	6-3⅞x4½	233	6.3	181	93-3400	4-2⅝x6‡‡	N	Own H41B	4	Own R1360	SF	H	5.28-7.16	Own F350	LH41H	294	509	C	FX	.....	8¼x3½x¼	T
2	KB-6	1900	194	212	17000	4910	7.00/20D	8.25/20	Own BLD250	6-3⅞x4½	251	6.3	200	100-3200	4-2¾x4‡‡	N	Own WT97	5	Own R1560	SF	H	5.61-7.16	Own F470	LH41HV	305	539	C	FX	.....	8¼x3¼x¼	T
3	KB-7	2525	212	248	19000	5770	7.50/20D	9.00/20	Own BLD269	6-3⅞x4½	269	6.3	222	100-3000	4-2.7x4‡‡	N	Own F51	5	Own R1560	SF	H	6.50-7.16	Own F470	LH41HV	368	633	C	FX	.....	9½x3¼x¼	T
4	KB-8	3675	230	251	22000	6990	9.00/20D	10.00/20	Own RED361	6-4¼x4½	361	6.3	282	126-3000	7-3¼x10½	Y	Own F51	5	Own R1572	SF	H	6.43-8.51	Own F553	LH41HV	407	709	C	FX	.....	10x3½x¼	T
5	Kenworth(D)..521	.....	161	215	35000	12200	10.00/20	11.00/22	Cum HB6	6-4⅛x6	672	17.	500	150-1800	7-4½x16½	Y	BL 8241	4	Tim U200P	DR	H	6.42-7.84	Tim 36000TW	Ws41A	752	1050	a	TD	72	9½x3¼x¼	C
6	585	.....	150	215	30000	10130	10.00/20	11.00/22	Bu LO525	6-4½x5½	525	5.5	385	150-2200	7-3x11½	Y	Fu 5A620	5	Tim U200P	.....		6.14	Tim 36000TW	Ws41A	752	....	a	....	70	9½x3¼x¼	....
7	Linn.....L-2	.....	120	....	9000	6000	7.50/20S	8.25/20S	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10½	N	WGT9	4	Own 601	N	N	None	Tim F30B28H	L4IH	306	478	a	T	.....	None	....
8	.....L-4	.....	156	....	9200	6200	7.50/20S	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10½	N	WGT9	4	Own 601	N	N	None	Tim F30B28H	L4IH	306	478	a	X	.....	None	....
9	.....L-6	.....	169	....	12700	7700	7.50/20D	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10½	N	WGT9	4	Own 602T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
10	.....L-8	.....	205	....	12900	7900	7.50/20D	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10½	N	WGT9	4	Own 602T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
11	Mar. Her...DVL-4	.....	90	118	‡6750	.....	7.50/16S	8.25/18S	Willys MB	4-3⅛x4⅝	134	6.4	105	60-4000	3-2.33x5.48	Y	Own	3	(Front Drive)	.....	.....	7.10	Own	4IH	202	327	M2	....	.....	None	....
12	Peterbilt(D)...280	.....	175	Opt	35000	12500	10.00/20D	11.00/22	Cum HB600	6-4⅛x6	672	17.	500	150-1800	7-4½x16½	Y	Spi 8041	12	U-200P	2F	R	** -6.42	TimFe900DPA	Ws41A	738	1052	..	TD	86½	10⅝x3¼x⅜	CT
13	Reo.....D-19XA	.....	125	125	8000	4340▲	7.00/20S	8.25/20S	Own GC 245	6-3½x4¼	245	6.2	192	89-3100	7-2⅛x10.7	Y	WG T97	4	Tim 53547	SF	H	5.66-6.67	Tim 30000	T41H▼	310	482	var	TX	60⅛	8¼x2½x⅜	T
14	.....D-19A	.....	125	125	16000	4740▲	7.50/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89-3100	7-2⅛x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8♦	Tim 30000	T41VH▼	310	482	var	TX	60⅛	8¼x2½x⅜	T
15	.....D-19T	.....	125	125	16000	5330▲	8.25/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89-3100	7-2⅛x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13-8.10	Tim 30000	T41VH▼	310	482	var	TX	60⅛	8¼x2½x⅜	T
16	.....D-19B	.....	150	150	16000	4900▲	7.50/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89-3100	7-2⅛x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8♦	Tim 30000	T41VH▼	310	482	var	TX	80⅛	8¼x2½x⅜	T
17	.....D-19EX	.....	125	188	16000	4740▲	7.50/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89-3100	7-2⅛x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.67	Tim 31000	T41VH▼	310	482	var	TX	60⅛	8¼x2½x⅜	T
18	.....D-19C	.....	165	165	16000	5090▲	7.50/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89-3100	7-2⅛x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8♦	Tim 30000	T41VH▼	310	482	var	TX	100⅛	8¼x2½x⅜	T
19	.....D-19L	.....	187	187	16000	5080▲	8.25/20	8.25/20	Own GC 245	6-3½x4¼	245	6.2	192	89-3100	7-2⅛x10.7	Y	WG T97	4	T-E100-E300	HF	H	5.28-6.8♦	Tim 30000	T41VH▼	310	482	var	TX	123⅛	9x3x¼	Tf
20	.....D-21A	.....	125	125	17000	4920▲	7.50/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96-3000	7-2⅛x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8♦	Tim 31013	T41VH▼	310	482	var	TX	60⅛	8¼x2½x⅜	T
21	.....D-21T	.....	125	125	17000	5380▲	8.25/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96-3000	7-2⅛x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13-8.10	Tim 31013	T41VH▼	310	482	var	TX	60⅛	8¼x2½x⅜	T
22	.....D-21B	.....	150	150	17000	5230▲	8.25/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96-3000	7-2⅛x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8♦	Tim 31013	T41VH▼	310	482	var	TX	85⅛	9x3x¼	T
23	.....D-21C	.....	165	165	17000	5270▲	8.25/20	8.25/20	Own GC 288	6-3½x5	288	6.2	225	96-3000	7-2⅛x10.7	Y	WG T97	4	Tim E100	HF	H	5.28-6.8♦	Tim 31013	T41VH▼	310	482	var	TX	100⅛	9x3x¼	Tf
24	.....D-21R-A	.....	130	130	20000	6040▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅛x10.7	Y	Cla 205V-VO	5	Tim H200-300	HFd	H	7.3♦	Tim 31104	T41VH▼	344	584	var	TX	65⅛	9x3x¼	T
25	.....D-21R-T	.....	130	130	20000	6380▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅛x10.7	Y	Cla 205V-VO	5	Tim H300	HFd	H	5.95-7.3	Tim 31104	T41VH▼	344	584	var	TX	65⅛	9x3x¼	T
26	.....D-21R-B	.....	150	150	20000	6080▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅛x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8♦	Tim 31104	T41VH▼	344	584	var	TX	85⅛	9x3x¼	T
27	.....D-21R-C	.....	165	165	20000	6180▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅛x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8♦	Tim 31104	T41VH▼	344	584	var	TX	100⅛	9x3x¼	Tf
28	.....D-21R-L	.....	185	185	20000	6430▲	9.00/20	9.00/20	Own GC 310	6-3⅝x5	310	6.2	243	101-3000	7-2⅛x10.7	Y	Cla 205V-VO	5	Tim H100-300	HFd	H	6.16-6.8♦	Tim 31104	T41VH▼	344	584	var	TX	120⅛	9½x3¼x¼	Tf
29	.....E22A	.....	130	130	20000	6165▲	9.00/20	9.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	Tim H100-300	HFd	H	6.16-7.2♦	Tim 31104	T41VH▼	370	640	var	TX	65⅝	9x3x¼	T
30	.....E22T	.....	130	130	20000	6740▲	9.00/20	9.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	Tim H300-	HFd	H	6.67-8.85	Tim 31104	T41VH▼	370	640	var	TX	65⅝	9x3x¼	T
31	.....E22B	.....	150	150	20000	6330▲	9.00/20	9.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	Tim L100-300	HFd	H	6.16-7.2♦	Tim 31104	T41VH▼	370	640	var	TX	85⅝	9x3x¼	T
32	.....E22C	.....	170	170	20000	6465▲	9.00/20	9.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	T H100-H300	HFd	H	6.16-7.2♦	Tim 31104	T41VH▼	370	640	var	TX	105⅝	9x3x¼	Tf
33	.....E22L	.....	185	185	20000	6600▲	9.00/20	9.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	T H100-H300	HFd	H	6.16-7.2♦	Tim 31104	T41VH▼	370	640	var	TX	120⅝	9½x3¼x¼	Tf
34	.....E22RA	.....	130	130	22000	6605▲	10.00/20	10.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	T L100-L300	HFd	H	6.16-7.4♦	Tim 32500	T41VH▼	422	644	var	TX	65⅝	9x3x¼	T
35	.....E22RT	.....	130	130	22000	7205▲	10.00/20	10.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	Tim L300-	HFd	H	6.32-8.22	Tim 32500	T41VH▼	422	644	var	TX	65⅝	9x3x¼	T
36	.....E22RB	.....	150	150	22000	6770▲	10.00/20	10.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	Tim L100-300	HFd	H	6.16-7.4♦	Tim 32500	T41VH▼	422	644	var	TX	85⅝	9x3x¼	T
37	.....E22RC	.....	170	170	22000	6905▲	10.00/20	10.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	Tim L100-300	HFd	H	6.16-7.4♦	Tim 32500	T41VH▼	422	644	var	TX	105⅝	9x3x¼	Tf
38	.....E22RL	.....	185	185	22000	7040▲	10.00/20	10.00/20	Own 331-0A	6-4⅛x4⅛	331	6.4	264	140-3200	7-2x9.408	Y	Cla 205V	5	Tim L100-300	HFd	H	6.16-7.4♦	Tim 32500	T41VH▼	422	644	var	TX	120⅝	9½x3¼x¼	Tf
39	.....D-23T	.....	130	130	24000	8000▲	10.00/20	10.00/20	Con T-6427	6-4¼x4⅛	427	6.0	335	146-2800	7-2⅛x13.6	Y	Cla 270V-VO	5	Tim L100	HF	H	5.28-6.16♦	Tim 32500	BW41A	514	644	var	TX	65⅝	9½x3¼x¼	T
40	.....D-23L	.....	185	185	24000	7900▲	10.00/20	10.00/20	Con T-6427	6-4¼x4⅛	427	6.0	335	146-2800	7-2⅛x13.6	Y	Cla 270V-VO	5	Tim L100	HF	H	5.28-6.16	Tim 32500	BW41A	514	644	var	TX	120⅝	9½x3¼x¼	Tf
41	.....D-23S-A	.....	130	130	24000	7150▲	9.00/20	10.00/20	Con T6371	6-4⅛x4⅜	371	6.3	292	126-2600	7-2⅞x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** -7.8	Tim 32500	T41VH▼	370	644	var	TX	65⅝	9½x3¼x¼	T
42	.....D-23S-T	.....	130	130	24000	7770▲	9.00/20	10.00/20	Con T6371	6-4⅛x4⅜	371	6.3	292	126-2600	7-2⅞x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** -7.8	Tim 32500	T41VH▼	370	644	var	TX	85⅝	9½x3¼x¼	T
43	.....D-23S-B	.....	150	150	24000	7575▲	9.00/20	10.00/20	Con T6371	6-4⅛x4⅜	371	6.3	292	126-2600	7-2⅞x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** -7.8	Tim 32500	T41VH▼	370	644	var	TX	85⅝	9½x3¼x¼	T
44	.....D-23S-C	.....	165	165	24000	7590▲	9.00/20	10.00/20	Con T6371	6-4⅛x4⅜	371	6.3	292	126-2600	7-2⅞x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** -7.8	Tim 32500	T41VH▼	370	644	var	TX	100⅝	9½x3¼x¼	Tf
45	.....D-23S-L	.....	185	185	24000	7680▲	9.00/20	10.00/20	Con T6371	6-4⅛x4⅜	371	6.3	292	126-2600	7-2⅞x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** -7.8	Tim 32500	T41VH▼	370	644	var	TX	120⅝	9½x3¼x¼	Tf
46	.....D-23R-T	.....	130	130	26000	8580▲	10.00/20	11.00/20	Con T-6427	6-4¼x4⅛	427	6.0	335	146-2800	7-2⅛x13.6	Y	Cla 270V-VO	5	Tim Q100-300	HFd	H	6.16♦	Tim 35011	BW41A	638	934	var	TX	65⅛	9½x3¼x¼	T
47	.....D-23R-B	.....	150	150	26000	8570▲	10.00/20	11.00/20	Con T-6427	6-4¼x4⅛	427	6.0	335	146-2800	7-2⅛x13.6	Y	Cla 270V-VO	5	Tim S200	HF2	H	7.84♦	Tim 35011	BW41A	712	1038	var	TX	85⅛	9½x3¼x¼	T
48	.....D-23R-BL	.....	185	150	26000	9060▲	10.00/20	11.00/20	Con T-6427	6-4¼x4⅛	427	6.0	335	146-2800	7-2⅛x13.6	Y	Cla 270VO&v	15	Tim S200	HF2	H	7.84♦	Tim 35011	BW41A	712	1038	var	TD	85⅛	9½x3¼x¼	T
49	.....D-23R-L	.....	185	185	26000	8300▲	10.00/20	11.00/20	Con T-6427	6-4¼x4⅛	427	6.0	335	146-2800	7-2⅛x13.6	Y	Cla 270V-VO	5	Tim Q100-300	HFd	H	6.16♦	Tim 35011	BW41A	638	934	var	TX	120⅝	9½x3¼x¼	Tf
50	.....30-A	.....	△145	145	32000	11000▲	11.00/20	11.00/24	Con R-6513	6-4⅛x5⅝	513	5.9	400	173-2800	7-3¼x14.7	Y	Spi6252A-53♦	5	TS300-U200	HFd	H	7.08♦	Tim 36000	BW41A	722	1038	var	TI	67	10½x3½x⅝	T
51	.....30-B	.....	△165	165	32000	11750▲	11.00/20	11.00/24	Con R-6513	6-4⅛x5⅝	513	5.9	400	173-2800	7-3¼x14.7	T	Spi6252A-53♦	5	TS300-U200	HFd	H	7.08♦	Tim 36000	BW41A	722	1038	var	TI	87	10½x3½x⅝	T
52	.....31-A	.....	△145	145	32000	11000▲	11.00/20	11.00/24	Con R-6602	6-4⅞x5½	602	5.9	464	202-2800	7-3¼x14.7	Y	Spi6252A-53♦	5	TS300-U200	HFd	H	7.08♦	Tim 36000	BW41A	722	1038	var	TI	67	10½x3½x⅝	T
53	.....31-B	.....	△165	165	32000	11750▲	11.00/20	11.00/24	Con R-6602	6-4⅞x5½	602	5.9	464	202-2800	7-3¼x14.7	Y	Spi6252A-53♦	5	TS300-U200	HFd	H	7.08♦	Tim 36000	BW41A	722	1038	var	TI	87	10½x3½x⅝	T
54	School Buses,																														
55	.....110SL & LS	.....	187½	206½	.....	.....	7.50/20	7.50/20	Own GC245	6-3½x4¼	245	6	192	89-3100	7-2⅝x10.7	Y	Cla 185F	4	Tim 53547	SF	H	6.67-....	Tim 31013	T4IVH▼	310	482	var	TX	.....	9x3x¼	T
56	.....121 & 121S	.....	206½	224½	.....	.....	8.25/20	8.25/20	Own GC288	6-3½x5	288	6	225	96-3000	7-2⅝x10.7	Y	Cla 231F	4	Tim E100	HF	H	6.8 -....	Tim 31104	T4IVH▼	314	532	var	TX	.....	9½x3⅛x¼	T
57	.....122 & 122S	.....	224½	224½	.....	.....	9.00/20	9.00/20	Own GC310	6-3⅝x5	310	6	243	101-3000	7-2⅝x10.7	Y	Cla 231F	4	Tim H100	HF	H	7.2 -....	Tim 31104	T4IVH▼	344	584	var	TX	.....	8½x3⅛x¼	T
58	.....122SX	.....	251	251½	.....	.....	9.00/20	9.00/20	Own GC310	6-3⅝x5	310	6	243	101-3000	7-2⅝x10.7	Y	Cla 231F	4	Tim H100	HF	H	7.2 -....	Tim 32500	T4IVH▼	344	588	var	TX	.....	9½x3⅛x¼	T
59	.123-123S-123SX	.....	224½	251½	.....	.....	9.00/20	9.00/20	Con B-6427	6-4⅞x4⅛	427	5.9	324	127-2700	7-2⅞x13.5	Y	Cla 270V	4	Tim L100	HF	H	6.83-....	Tim 32500	T4IVH▼	370	644	var	TX	.....	9½x3⅛x¼	T
60	Sterling....HD97	.....	148	175	24000	9150	9.00/20	11.00/20	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2½x12½	Y	Fu 5A43	5	Tim Q100DPH	FHy	R	5.29-7.80	Tim 35011H	T4IHV	524	926	A	TX	67	9x7x¼	A
61	.....HD105	.....	148	175	24000	9550	10.00/20	11.00/22	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2½x12½	Y	Fu 5A43	5	Tim R100DPH	FHy	R	5.29-7.40	Tim 35011H	T4IHV	524	926	A	TX	67	9x3¼x¼	A
62	.....HD115	.....	148	175	32000	10650	10.00/20	11.00/24	Wau 6SRKR	6-4⅝x5½	517	5.5	368	125-2250	7-3x13⅞	Y	Fu 5A62	5	Tim 8200P	2F	R	6.42-9.83	Tim 36000TW	Ws41A	722	1054	A	TX	67	9x3¼x¼	A
63	.....HD145	.....	148	175	36000	11250	11.00/20	12.00/24	Wau 6SRKR	6-4⅝x5½	517	5.5	368	125-2250	7-3x13⅞	Y	Fu 5A62	5	Tim 79721W	2F	R	7.69-11.3♦	Tim 36000TW	Ws41A	670	1118	A	TX	67	9¼x3⅛x⅜	A
64	(D)....HD115H	.....	158	185	32000	11950	10.00/20	11.00/24	Cum HB600	6-4⅛x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 4B86	4	Tim 8200P	2F	R	6.42-9.83	Tim 36000TW	Ws41A	722	1054	A	TX	68	9x3½x¼	A
65	(D)....HD145H	.....	158	185	36000	12550	11.00/20	12.00/24	Cum HB600	6-4⅛x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 4B86	4	Tim 79721W	2F	R	7.69-11.3♦	Tim 36000TW	Ws41A	670	1118	A	TX	68	9¼x3⅛x⅜	A
66	.....HC97	.....	148	175	24000	9200	9.00/20	11.00/20	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2½x12½	Y	Fu 5A43	5	Own 97H	CD	R	6.70-10.82	Tim 35011H	T41HV	518	852	A	TX	67	9x7x¼	A

(Turn to Page 94, Please)

▲ Includes Cab
♦—Two speed axle available.
‡ Rear only: Front 12.00/24.
▼—6231A Spicer Auxiliary Transmission.
▼—Lockheed type front and Timken dual primary rear brakes.
♦—8200 for 8.25/18 Tires.
♦—8031 F-G Spicer Transmission available
△—Special W.B.'s available on request.

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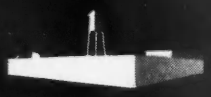
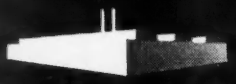
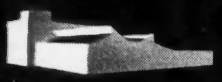


Automotive Engine Bearings



Aluminum Pistons



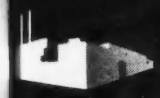
Aluminum Pistons

Aluminum Pistons and Pins

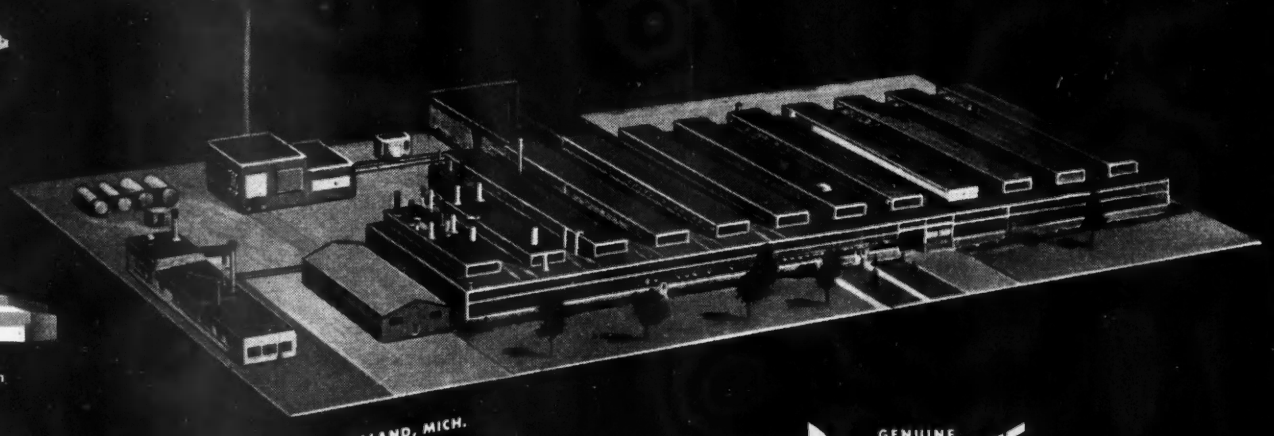
GENUINE BOHNALITE® PRODUCTS

NEW SERVICE DIVISION HEADQUARTERS NOW LOCATED AT HOLLAND, MICH.

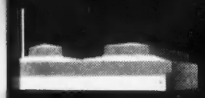
(FORMERLY CLAWSON & BALS)



Aluminum Sand Castings



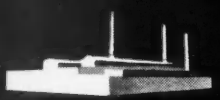
HOLLAND, MICH.



Magnesium Castings

Extruded Aluminum and Brass Products

Extruded Aluminum Products



Aluminum and Brass Forgings

GENUINE BOHNALITE PRODUCTS

- Pistons
- Engine Bearings
- Reconditioned Connecting Rods
- Rebabbitted Connecting Rods
- Piston Pins
- Water Pumps
- King Bolts
- Valve Springs
- Rod Dippers
- Water Tubes
- Babbitt Metal
- Bolts
- Nuts
- Shims
- Solders

Backed By Over 35 Years' Experience In Bohn's Multi-Plant Production of Original Equipment

This change in name to "Bohn Aluminum & Brass Corporation, *SERVICE DIVISION*," and in location to *HOLLAND, MICHIGAN*, (formerly Clawson & Bals) enables our Jobbers to give superior service to their customers by providing a complete line of *GENUINE BOHNALITE PRODUCTS*, backed by greatly expanded service facilities, and more than 35 years' accumulated experience in operating eleven plants producing similar parts, for original equipment, for leading manufacturers of cars, trucks and buses. INSIST on Genuine BOHNALITE Products.

BOHN ALUMINUM & BRASS CORPORATION

Executive Offices • Detroit, Michigan

Export Division, Holland, Michigan, U.S.A. (Cable Address: CONROD)

(Continued from Page 92)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Sterling Con't.																														
1	HC105		148	175	28000	9700	10.00/20	11.00/22	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2⅝x12½	Y	Fu 5A43§	15	Own 137H	CD	R	6.70-10.82	Tim 35011H	TL4IHV	540	842	A	TX	67	9x3¼x¼	A
2	HC115		148	175	32000	10350	10.00/20	11.00/24	Wau 6SRKR	6-4⅝x5½	517	5.5	368	125-2250	7-3x13⅜	Y	Fu 5A62§	15	Own 137W	CD	R	6.70-10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	67	9x3¼x¼	A
3	HC144		148	175	36000	11250	10.00/22	12.00/24	Wau 6SRKR	6-4⅝x5½	517	5.5	368	125-2250	7-3x13⅜	Y	Fu 5A62§	15	Own 148W	CD	R	6.70-10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9¼x3½x3⅜	A
4	HC147		148	175	36000	11500	10.00/22	12.00/24	Wau 6SRKR	6-4⅝x5½	517	5.5	368	125-2250	7-3x13⅜	Y	Fu 5A62§	15	Own 147W	CD	R	6.70-10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9¼x3½x3⅜	A
5	HC175		167	185	45000	14600	12.00/24†	14.00/24‡	Wau 145GK	6-5¼x6	779	6.2	585	186-2100	7-3½x17¾	Y	Fu 4B86●	12	Own 175W	CD	R	7.31-12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9¼x3½x3⅜	A
6	HC250		178	190	60000	18400	14.00/24‡	14.00/24‡	Wau 145GK	6-5¼x6	779	6.2	585	186-2100	7-3½x17¾	Y	Fu 4B86●	12	Own 251W	CD	R	7.31-12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅝	AL
7	(D) HC115H		167	185	32000	12250	10.00/20	11.00/24	Cum HB600	6-4⅞x6	672	17	500	150-1800	7-4½x16½	Y	Fu 4B86●	12	Own 137W	CD	R	6.70-10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	77	9x3¼x¼	A
8	(D) HC175H		167	185	45000	14930	12.00/24†	14.00/24‡	Cum HBD600	6-4⅞x6	672	17	500	150-1800	7-4½x16½	Y	Fu 4B86●	12	Own 175W	CD	R	7.31-12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9¼x3½x3⅜	A
9	(D) HC250H		178	190	60000	18700	14.00/24‡	14.00/24‡	Cum HBD600	6-4⅞x6	672	17	500	150-1800	7-4½x16½	Y	Fu 4B86●	12	Own 251W	CD	R	7.31-12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅝	AL
10	Studebaker 2R5	1022	112	112	4600	2125	6.00/16S	6.50/16S	Own 1R	6-3x4	170	7.0	138	85-4000	4-2⅞x5	N	Own 673519	3	Own 673874	Hy	H	**-4.82	Own 677574	Wg4IH	170	276	CO	2I	40	7x2⅛x⅛	T
11	2R10	1088	122	122	6100	2400	6.50/16S	7.50/16S	Own 1R	6-3x4	170	7.0	138	85-4000	4-2⅞x5	N	Own 673519	3	Own 677806	SF	H	5.57-4.86	Own 677574	Wg4IH	198	314	CO	2I	50	7x2⅛x⅛	T
12	2R15-21	1236	121	121	7800	3005	7.00/17S	7.00/20	Own 2R	6-3x4	170	7.0	138	85-4000	4-2⅞x5	N	Own 676044	4	Own 677768	SF	H	5.83-6.66	Own 677091	LH4IH	226	342	Ce	TX	50	8x2⅜x⅛	T
13	2R15-31	1255	131	131	10000	3065	7.00/17S	7.00/20	Own 2R	6-3x4	170	7.0	138	85-4000	4-2⅞x5	N	Own 676044	4	Own 677768	SF	H	5.83-6.66	Own 677091	LH4IH	226	342	Ce	TX	60	8⅛x2⅜x⅛	T
14	2R16	1291	131	195	14000	3695	6.50/20D	8.25/20	Own 3R	6-3⅛x4⅜	226	6.5	174	94-3400	4-2⅛x5	N	Own 676045	4	Own 675732††	SF	H	6.66-5.66	Own 674484	LH4IH	294	442	Ce	TX	60	8⅛x2⅜x⅛	T
15	2R16A	1326	131	195	14000	3695	6.50/20 D	8.25/20	Own 4R	6-3⅛x4¾	245	7.0	205	102-3200	4-2⅞x5	N	Own 678790	4	Own 675732†	SF	H	6.66-5.66	Own 674484	LH4IH	294	442	Ce	TX	60	8⅛x2⅜x⅛	T
16	2R17	1592	131	195	16000	4180	7.50/20D	8.25/20	Own 3R	6-3⅛x4¾	226	6.5	174	94-3400	4-2⅛x5	N	Own 676045	4	Own 675571††	Hy	H	6.80-....	Own 674484	LH4IH	367	553	Ce	TX	60	8⅛x2⅜x⅛	P
17	2R17A	1627	131	195	16000	4180	7.50/20 D	8.25/20	Own 4R	6-3⅛x4¾	245	7.0	205	102-3200	4-2⅞x5	N	Own 678794	4	Own 675571††	Hy	H	6.80-6.20	Own 674484	LH4IH	367	553	Ce	TX	60	8⅛x2⅜x⅛	P
18	Ward La Fr. D-1		149	220	25000	▲ 9500	10.00/20	11.00/20	Con T6427	6-4⅛x4⅛	427	5.1	340	152-2600	7-2⅛x13½	Y	Ful 5A430	5	Tim Q-100	B	R	**-6.83	Tim 35017TW	Ws4A	600	928	C	TM	68¼	9⅛x3x¼	T
19	D-1C		149	220	29000	▲ 9500	11.00/20	11.00/22	Con T6427	6-4⅛x4⅛	427	5.1	340	152-2600	7-2½x13½	Y	Ful 5A430	5	Tim S-200	S2	R	**-7.08	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	9⅛x3x¼	T
20	D-2K		149	220	29000	▲10000	11.00/20	11.00/22	Wau 140GK	6-4½x5½	525	6.4	425	168-2400	7-2¾x13⅜	Y	Ful 5A620	5	Tim S-200	S2	R	**-7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x⅛	T
21	D-2Z		149	220	29000	▲10000	11.00/20	11.00/20	Wau 140GZ	6-4½x5½	554	6.4	456	184-2400	7-3¼x13½	Y	Ful 5C650	5	Tim S-200	S2	R	**-7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x⅛	T
22	D-3		149	220	29000	▲10000	11.00/20	11.00/22	Con R6572	6-4¾x5½	572	5.9	440	189-2600	7-3¼x14½	Y	Ful 5C650	5	Tim S-200	S2	R	**-7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x⅛	T
23	D-3S		149	220	29000	▲10000	11.00/20	11.00/22	Con R6602	6-4¾x5¾	602	5.9	463	198-2600	7-3¼x14½	Y	Ful 5C650	5	Tim S-200	S2	R	**-7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x⅛	T
24	D-5		149	220	35000	▲12500	11.00/22	11.00/22	Cum HB600	6-4½x6	672	17	500	150-1800	7-4½x16¾	Y	Ful 5C650	5	Tim U-200	S2	R	**-6.42	Tim 27463	Ws4B	681	1041	C	TM	68¼	10x3½x⅛	T
25	Willys (Sd.Del.)463	1295*	104	104	4000	*2752	6.50/15S	.....	Own 463	4-3½x4⅛	134	6.5	105	63-4000	3-2.33x5.48	N	WG T96	3	Spl 23-1	Hy‖	H	4.88-5.38	Own I Tr	B4IH	133	220	a	2I	.....	5x2¼x.063	TfD
26	Willys 2WD	1295*	118	118	5300	*2788	6.50/16S‖	7.00/16S	Own 2WD	4-3½x4⅛	134	6.5	105	60-4000	3-2.33x5.48	N	WG T90E	3	Tim51540NX4	S‖	H	5.38-6.17	Cla F-154	B4IH	176	276	a	2I	42.28	5½x2x⅛	TD
	Four-Wheel-Drive																														
27	Coleman G-55		136	150	30000	11750	11.00/20	12.00/20	Buda LO-525	6-4½x5½	525	6.7	400	150-2200	7-3x7¼	Y	Fu 5A650	5	OW-C375FXa	.....	.....	9.66	OW	TW IA	638	940	...	FD	96	9x4x⅜	C
28	Corbitt 22FG		159	Opt	22000	.....	9.00/20	10.00/20	Con B6371	6-4½x4⅛	371	6.0	280	100-2600	7-2⅞x13½	Y	Fu 5A43	5	Tim R2090H	2F	H	** -8.43	Tim F2090H	L4IHV	....	868	a	TD	74	9x3x¼	DL
29	Dodge B-2-PW		126	126	8700	.....	6.00/16-8	9.00/16-8	Own T-137	6-3¼x4⅛	230	6.7	186	94-3200	4-2½x4.8	Y	NP-88790	4	Own T-137	HyF	H	4.89-5.83	Own T-137	O4IH	210	311	Co	TX	52‖	⅄x2⅄x6½	C
30	FWD HA		132	168	.....	▲7470	8.25/20D	10.00/20	Wau BZ	6-4x4¼	320	5.9	237	104-3000	7-2⅝x10¼	Y	Own H	5	Own H	8F	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
31	HR		132	168	.....	▲8000	9.00/20	10.00/20	Wau MZA	6-4¼x4⅝	404	5.6	291	129-2800	7-2⅝x12½	Y	Own H	5	Own H	8F	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
32	HG		154	154	.....	▲8050	9.00/20	10.00/20	Wau MZA	6-4¼x4¾	404	5.6	291	129-2800	7-2⅝x12½	Y	Own H	5	Own H	8F	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	89¾	7⅄x3x‡‡	C
33	8U		150	182	.....	▲10570	11.00/20D	12.00/20	Wau 8RKR	6-4⅝x5½	517	5.5	365	126-2400	7-3x13⅞	Y	Own U	5	Own U	BF	H	6.7 -9.8	Own U	L4IHV	512	985	a	T4	90	8⅄x3x‡‡	C
34	YU		150	182	.....	▲11570	11.00/20D	12.00/20	Wau 140GK	6-4½x5½	525	6.1	425	142-2250	7-3¼x13‡‡	Y	Own S	5	Own YU	8F	H	5.7-10.8	Own YU	Wg4IHV	539	804	a	T4	90	8⅄x3x‡‡	C
35	ZU		150	182	.....	▲12540	11.00/20D	12.00/20	Wau 140GZ	6-4¾x5½	554	6.4	460	188-2600	7-3¼x13‡‡	Y	Own S	5	Own ZU	8F	H	6.6-11.4	Own ZU	Wg4IHV	640	1106	a	T4	90	10⅄x3x‡‡	C
36	M7G		150	180	.....	▲15500	12.00/20D	12.00/24	Wau 145GK	6-5¼x6	779	6.2	585	186-2000	7-3½x17¾	Y	Own M	10	Tim 1758W	2F	H	5.9 -8.8	Wis F409W	WW4IA	644	1090	a	T4	90	10⅄x3x‡‡	C
37	(D) M7D		150	180	.....	▲16100	12.00/20D	12.00/24	Bu DC844	6-5¼x6½	844	...	605	180-1800	7-3¾x17	Y	Own M	10	Tim 1758W	2F	H	5.9 -8.8	Wis F409W	WW4IA	644	1090	a	T4	90	10⅄x3x‡‡	C
38	M10G		150	180	.....	▲15800	11.00/24D	12.00/24	Wau 145GK	6-5½x6	779	6.2	585	186-2000	7-3½x17¾	Y	Own M	10	Tim 79721W	2F	H	6.7 -9.2	WisF408CWXI	WW4IA	693	1144	a	T4	90	10⅄x3x‡‡	C
39	(D) M10D		150	180	.....	▲16400	11.00/24D	12.00/24	Bu DC844	6-5¼x6½	844	...	605	180-1800	7-3¾x17	Y	Own M	10	Tim 79721W	2F	H	6.7 -9.2	WisF408CWXI	WW4IA	693	1144	a	T4	90	10⅄x3x‡‡	C
40	Marmon-MH440-4		158	170	24000	▲9800	9.00/20D	10.00/20	Her WXLC3	6-4¼x4¼	404	5.4	293	118-2800	7-2⅝x13¼	Y	Fu-MH31	5	Own 1121	2B	H	** -8.43	Own 121	W....A	584	887	c	F	72	9⅓x3x¼	T
41	Herr..MH-RC 4		161	....	26000	10550	9.00/20	10.00/20	Her RXC	6-4⅜x5¼	529	6.3	390	131-2200	7-3x13¼	Y	Fu	5	Own 1121	2B	H	** -8.43	Own 121	W....A	584	....		F	72	9⅓x3x¼	T
42	MH555-4		161	173	30000	▲11550	10.00/20D	11.00/20	Her RXC	6-4⅜x5¼	529	6.3	390	131-2200	7-3x13¼	Y	Fu-MH33	5	Own 1122	2B	H	** -8.15	Own 122	W....A	692	1039	c	F	72	10⅄x3x⅛	T
43	MH-RH 4		161	....	33000	11980	10.00/20	11.00/20	Her RXLDH	6-4¾x5¼	558	6.1	440	180-2600	7-3x13¼	Y	Fu	5	Own 1122	2B	H	** -8.15	Own 122	W....A	696	....		F	72	10⅄x3x⅛	T
44	(C) R5-4		134	134	15500	▲5100	7.50/20D	7.50/20	Ford	8-3⅛x3⅜	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -6.67	Own M5	F....H	303	563	a	F	60⅄	7x2¾x⅄	T
45	(C) R6-4		158	158	15500	▲5331	7.50/20D	7.50/20	Ford	8-3⅛x3⅜	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -6.67	Own M5	F....H	303	563	a	F	84⅄	7x2¾x⅄	T
46	(C) LD7-4		114	....	5300	▲3500	15*	15*	Ford	8-3⅛x3⅜	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -4.11	Own O	F....H	162	....	A	F	40⅄	5‡‡x2¼x⅄	T
47	(C) R3-4		122	....	6800	▲4100	7.50/17	7.50/17	Ford	8-3⅛x3⅜	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -4.86	Own I	F....H	186	....	A	F	48	6x2¼x⅄	T
48	(C) R4-4		134	....	10000	▲4900	7.00/20D	7.00/20	Ford	8-3⅛x3⅜	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -5.33	Own	F....H	303	563	A	F	60⅄	7x2¾x⅄	T
49	(C) R5-A-COE4		110	158	14000	▲5360	7.50/20D	7.50/20	Ford	8-3⅛x3⅜	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -6.67	Own	F....H	303	563	A	F	60⅄	7.08x2.8x¼	T
50	(C) Q5-4		136	....	21500	▲7100	9.00/20	10.00/20	Ford	8-3⅛x4⅛	337	6.4	255	145-3600	3-2⅛x5.21	Y	Ford	5	Ford	H	H	6.80	Own	F....H	350	583	A	F	61	9x3x⅛	T
51	(C) Q6-4		160	....	21500	▲7200	9.00/20	10.00/20	Ford	8-3⅛x4⅛	337	6.4	255	145-3600	3-2⅛x5.21	Y	Ford	5	Ford	H	H	**-6.80	Own	F....H	350	583	A	F	85	9x3x⅛	T
52	Q7-4		196	....	21500	▲7350	9.00/20	10.00/20	Ford	8-3⅛x4⅛	337	6.4	255	145-3600	3-2⅛x5.21	Y	Ford	5	Ford	H	H	**-6.80	Own	F....H	350	583	A	F	85	9x3x⅛	T
53	Q8-L4		148	....	21500	7150	9.00/20	10.00/20	Ford	8-3½x4⅛	337	6.4	255	145-3600	3-2⅛x5.21	Y	Ford	5	Ford	H	H	**-6.80	Own	F....H	350	583	A	F	85	8x3x⅛	T
54	Q6-L4		179	....	21500	7275	9.00/20	10.00/20	Ford	8-3½x4⅛	337	6.4	255	145-3600	3-2⅛x5.21	Y	Ford	5	Ford	H	H	**-6.80	Own	F....H	350	583	A	F	85	9x3x⅛	T
55	Oshkosh W-212		144	159	21000	8500	9.00/20	9.00/20	Her JXLD	6-4x4½	339	6.5	272	130-3000	7-2½x10‡‡	Y	Fu 5A43	5	Own W212	SF	H	** -7.2	Own W212	L4IH	400	665	G	TX	82	8x3x⅛	TF
56	W-312		149	205	25000	▲10200	10.00/20D	11.00/20	Her WXLCO3	6-4¼x4¾	404	6.3	312	139-2600	7-2⅝x13¾	Y	Fu 5A43	10	Own W312	SF	H	** -6.8	Own W312	L4II	510	876	G	TX	82	8¼x3x⅜	TF
57	W1700		150	205	28000	▲11000	11.00/20D	12.00/20S	Her RXC	6-4⅜x5¼	529	5.4	395	131-2200	7-3x13¼	Y	Fu 5A620	5	Own W1700	SF	H	** -6.4	Own 1700	L4IH	570	980	G	TX	82	8¼x3x⅜	TF
58	W-700		150	205	30000	▲12000	11.00/20D	12.00/20	Her RXCO	6-4⅜x5¼	529	5.4	395	131-2200	7-3x12¾	Y	Fu 5A650	10	Own W700	2F	H	** -6.8	Own W700	L4IH	630	975	G	TX	82	10¼x3x⅜	TF
59	(D) W-703D		150	205	30000	▲12700	11.00/20D	12.00/20	Her DRXC	6-4⅜x5¼	529	15.	398	147-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	** -6.8	Own W700	L4IHA	630	975	G	TX	82	10½x3x⅜	TF
60	W-703		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6-4¼x5¼	558	5.4	430	150-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	** -6.8	Own W700	L4IH	630	975	G	TX	82	10¼x3x⅜	TF
61	W-705		150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6-4¼x5¼	558	5.4	430	150-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	** -6.8	Own W700	L4IH	630	975	G	TX	82	10¼x3x⅜	TF
62	W-712		150	205	34000	12600	11.00/20D	12.00/20	Her RXLDH	6-4¼x5¼	558	...	462	190-2600	7-3½x13¼	Y	Fu 5A650	10	Own W712	2F	H	** -6.8	Own W712	L4IH	630	975	G	TX	82	10¼x3x⅜	TF
63	(D) W-906		158	181	38000	▲15600	12.00/20D	14.00/20S	Cum HB600	6-4⅛x6	672	...	500	150-1800	7-4½x16	Y	Fu 4A86	12	Own W906	2F	H	** -6.2	Own W906	LT4IW8	645	975	G	TX	90	10½x3⅛x¼	TF
64	(D) W906R		158	181	39000	15700	12.00/20D	14.00/20S	Cum 6HRB	6-5⅛x6	743	...	540	165-1800	7-4½x16	Y	Eu 4A86	12	Own W906R	2F	H	** -6.2	Own W906R	LT4IW8	645	975	G	TX	90	10½x3⅛x⅜	TF

(Turn to Page 96, Please)

♦ Rear only: Front 6.00/16.
♦♦—Two speed 6.13–8.10 optional.
▲ Includes cab.
*—Complete vehicle with pick-up type body.
§ Auxiliary Transmission Own OJ.
†—Two speed 6.20–6.80 optional.
● Auxiliary transmission Own FJ.
† Rear only: Front 11.00/24.

COMMERCIAL CAR JOURNAL, December, 1949

"The ... have ... best ... beat ... choi ...

For ... Mar ... aga ... wor ...

"Hello Snap-on!"

"Our Snap-on Service Tool Representative brings new tools with time-saving ideas to both our shop and our mechanics,"
says John J. Gangloff, Service Manager,
City Lincoln-Mercury Co., Pasadena, Calif.

. . . and John Gangloff adds this, "Snap-on tools have always been first with me because they are best. Add Snap-on service and you have an unbeatable combination. Snap-on tools are truly the choice of better mechanics!"

From coast to coast, reports from top Service Managers like John Gangloff, prove over and over again that Snap-on tools contribute to better workmanship, encourage speed and accuracy, and promote happier service relations. Every call of the Snap-on field man helps keep tool kits up to par and cuts wasteful "tool-chasing" time.

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For 29 years, Snap-on's Nation-wide Tool Service has proved to be "The Time-Saving Way to buy Time-Saving Tools!"

(Continued from Page 94)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter Length	Governor Standard	TRANS-MISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Oshkosh, Con't.																														
1	W2200		160	181	40000	▲16500	13.00/20D	14.00/20S	Bu MO779	6–5¼x6	779		575	188–2100	7-3¾x17	Y	Fu 4A86	12	Own W2200	2F	H	** –6.15	Own 2200	LT4IA	645	975	G	TX	90	10½x3¼x¾	LF
2	W2201		160	181	40000	▲16500	13.00/20D	14.00/20S	Bu MO893	6–5¾x6	893		670	200–1800	7-3¾x17	Y	Fu 4A86	12	Own W2201	2F	H	** –6.15	Own 2201	LT4IA	645	975	G	TX	90	10½x3¼x⅝	TF
3	(D) W2204		160	181	46000	▲18500	13.00/20D	14.00/24	Bu 6DC844	6–5¼x6½	844		605	180–1800	7-3¾x17	Y	Fu 4A86	12	Own W2204	2F	H	** –6.4	Own 2204	LT4IA	780	1190	G	TX	90	10½x3½x⅝	TF
4	(D) W2205		160	181	54000	▲19500	13.00/20D	14.00/24	Bu 6DC8844	6–5¾x6½	844		740	240–2100	7-3¾x17	Y	Fu5A920	10	Own W2205	2F	H	** –6.3	Own W2205	LT4IA	780	1190	G	TX	90	10½x3½x⅝	LF
5	W2206		160	181	54000	▲19000	13.00/24D	14.00/24	HS 400	6–5¾x7	■	5.7	930	295–2000	7-3¾x14	Y	Fu5A1120	10	Own W2206	2F	H	** –6.3	Own W2206	LT4IA	780	1190	G	TX	90	10½x3½x⅝	LF
6	(D) W2208		160	181	46000	17700	13.00/20D	14.00/24	Cum NH600	6–5½x6	743		535	200–2100	7-4½x16½	Y	Fu 4A86	12	Own W2208	2F	H	** –6.4	Own W2208	LT4IA	780	1190	G	TX	90	10½x3½x⅝	TF
7	W2209		160	181	54000	19500	13.00/24D	14.00/24	Cum NHRS600	6–5½x6	743		800	300–2100	7-4½x16½	Y	Fu 5A1120	10	Own W2209	2F	H	** –6.30	Own W2209	LT4IA	780	1190	G	TX	90	10½x3 | x⅝	LF
8	Sterling DD115		160	178	32000	11500	10.00/20	11.00/24	Wau 6SRKR	6–4⅝x5½	517	5.5	368	125–2250	7-3x13⅞	Y	Fu 5A62‡	10	Tim 1357W	2F	H	6.52–8.6	Tim F3110W	Ws4IA	644	984	A	TX	76	9x3¼x¼	A
9	(D) DD145H		167	185	36000	13900	11.00/20	12.00/24	Cum HB600	6–4½x6	672	17	500	150–1800	7-4½x16½	Y	Fu 4B86▼	10	Tim 1758W	2F	H	7.33–10.3	Tim F409CW	Ws4IA	644	984	A	TX	77	9¼x3⅝x⅝	A
10	Walter (c.f.) FN		126	150	20000	7500	9.00/20D	10.00/20S	Wau MZA	6–4¼x4⅛	404	5.6	290	125–2600	7-2⅝x12½	Y	Own FN	6	Own FNB	2	H	6.0–8.0	Own FN	O4IA	470	670	G	FI	84	7x2¾x¼	C
11	(c.f.) FZM		126	150	24000	8500	10.00/20D	12.00/20S	Wau MZA	6–4¾x4⅛	404	5.6	290	125–2600	7-2⅝x12½	Y	Own FN	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x½	B
12	(c.f.) FCK		126	138	30000	10500	10.00/24D	11.00/24S	Wau SRKR	6–4⅝x5½	517	5.5	365	125–2200	7-3x13⅛	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FC	O4IA	585	890	D	FI	84	13x3¾x½	B
13	(c.f.) FC		138	162	32000	11000	11.00/24D	12.00/24S	Wau SRKR	6–4¾x5½	517	5.5	365	125–2200	7-3x13⅛	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	96	14x3¾x½	B
14	(c.f.) FGB		126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6–5¼x6	779	5.7	580	185–2000	7-3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x½	B
15	(c.f.) FGR		126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6–5¼x6	779	5.7	580	185–2000	7-3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	89	14x3¾x½	B
16	Ward La Fr. FD1				35000	▲11500	11.00/22	11.00/22	Cont 6513	6–4½x5¼	513	5.9	405	180–2800	7-3¼x14½		Ful 5A620	5	Tim R462W	S2	R	** –8.15	Tim F3100W	BW4IA	627	1029	Co	PM		10x3x⅞	C
17	(D) FD2				35000	▲12000	11.00/24	11.00/24	Cum HB600	6–5½x6	672	17	500	150–1800	7-4½x16¾		Ful 5A620	5	Tim R462W	S2	R	** –8.15	Tim F3100W	BW4IA	627	1029	Co	PM		10x3x⅞	C
18	Willys Jp. CJ-3A	1195*	80	80	3500	•2169	6.00/16	7.00/15	Own CJ-3A	4–3½x4½	134	6.5	105	60–4000	3–2.33x5.48	N	WG T90C	‡6	Spi 41-2	Hy‡	H	** –5.38	Spi 25	B41H	118	198	a	F		4x1¼x⅛	P
19	4WD	1695*	118	118	5300	•2920	7.00/16		Own 4WD	4–3½x4½	134	6.5	105	60–4000	3–2.33x5.48	Y	WGT90A	‡6	Tim51540NX4	S½	H	** –5.38	Spi 25	B41H	176	276	a	2I	42.28	5½x2x⅞	TD
	Six-Wheelers Wheels ▼ Driven																														
20	Dodge B-I-VX		154	190	34000		9.00/20	10.00/20	Own T159	6–3¾x5	331	6.5	270	128–3000	7-3x11.2	Y	NP 88450	5	Tim SBD1555	HyF		6.8 –7.2	T-35020NX9	O6IA	727	1056	C	TX	84	10x3x¼	CP
21	Duplex TH6		162	220	30000	9180	8.25/20	9.00/20	Her JXD	6–4x4 ¼	320	6.2	240	113–3000	7-2 ⅛x10‡‡	Y	Fu 5B33▲	10	Tim SBD1055	BF	L	**–6.16	Tim 32502H	L6IHV	513	839	A	TX	83 ¼	9 ½x3 ⅛x ⅞	L
22	RH-6		160	208	40000	11500	10.00/20	11.00/20	Her WXLC3	6–4¼x4¾	404	5.8	312	134–2600	7-2½x13⅛	Y	Fu 5A43	5	Tim SD3010	2F	R	8.27	Tim 35100	WS61A	1075	1525	A	TX	73¾	10½x3½x⅞	L
23	(D) L6		172	208	45000	15000	11.00/20	12.00/20	Cum HB600	6–4 ½x6	672	17	495	150–1800	7-4 ½x16 ½	Y	Fu 5A920	5	Tim SD454	8F2	L	6.8–8.15	Tim 26450	Ws6IA	1137	1625	A	TX	77 ⅝	10 ½x3½x⅞	L
24	Federal 663MA		189	225	40000	14500	10.00/20	10.00/22	Con R6602	6–4⅞x5⅝	602		466	205–3000	7-3¼x14½	Y	Fu 5A65▼	15	T SW3012P	WF	R	** –6.16	Tim 36000TW	Ws6IA	1082	1569	a	TD	108	10½x3¼x⅞	T
25	664MAB		189	225	55000	15850	11.00/22	12.00/20	Con R6602	6–4⅞x5⅝	602		466	205–3000	7-3¼x14½	Y	Spi 7741▼	12	Tim SW456P	WF	R	** –7.6	Tim 27452W	Ws6IA	1308	1888	a	TD	108	10½x3½x⅞	T
26	664MA		189	225	55000	1o950	11.00/22	12.00/20	Con R6602	6–4⅞x5½	602		466	205–3000	7-3¼x14½	Y	Spi 7741▼	12	Tim SD462P	BR	R	** –8.15	Tim 27452W	Ws6IA	1092	1624	a	TD	108	10½x3½x⅞	T
27	629M		163	199	27500	8600	8.25/20	9.00/20	Her JXDF	6–4x4¼	320		250	131–3200	7-2½x10½	Y	Cla 205V‡‡△	10	TSBD1055dph	SF	R	7.53 10.35	Tim 32514H	LT61HV	544	914	a	TX	84	9 ⅞x3½x⅛	TL
28	629ML		163	199	27500	8635	8.25/20	9.00/20	Her JXLDF	6–4x4½	339		272	131–3200	7-2½x10½	Y	Cla 205V‡‡△	10	TSBD1055dph	SF	R	7.53 10.35	Tim 32514H	LT61HV	544	914	a	TX	84	9 ⅞x3½x⅛	T
29	635M		167	203	36000	10400	9.00/20	9.00/20	Con T6371F	6–4½x4⅛	371		290	140–3000	7-2½x13½	Y	Cla 290VO△	10	TSBD1555dph	SF	R	8.33 11.47	Tim 35011H	LT61HV	752	1132	a	TX	84½	10½x3½x⅞	T
30	645M		167	215	38000	12325	10.00/22	10.00/22	Con T6427F	6–4¾x4½	427		347	155–2600	7-2½x13½	Y	Cla 290VO	5	°T-SD3010P	BR	R	** –9.16	Tim 35011TW	Ws6IA	1073	1550	a	TD	84½	10½x3½x⅞	T
31	F.W.D. H6x6		Opt	Opt		▲12150	9.00/20D	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	291	129–2800	7-2⅝x12½	Y	Own H	8F	L	** –7.45	Own H	L61HV	647	1281	a	T6	Opt	9x3x¼	T
32	M6x6G		Opt	Opt		▲21000	11.00/24D	12.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2000	7-3½x17¾	Y	Own M	10	Wis SD462	2F	L	** –6.06	Wis F409	WW6IA	1080	1680	a	T6	Opt	10 ⅞x3x ‡‡	P
33	(D) M6X6D		Opt	Opt		▲21600	11.00/24D	12.00/24	Bu DC844	6–5¾x6½	844		605	180–1800	7-3¾x17	Y	Own M	10	Wis SD462	2F	L	** –5.6	Wis F409	WW6IA	1080	1680	a	T6	Opt	10 ⅞x3x ‡‡	P
	International (2)																														
34	KB-6F 4R	3300	151	194	24000	7010	7.50/20D	8.25/20	Own BLD250	6–3 ⅞x4½	251	6.3	200	100–3200	4–2⅜x5‡‡	N	Own F51	5	Own RF1450	8F	H	6.16–6.66	Own F470	LH61HV	495	869	c	PX	77	8 ⅞x ⅞x ⅞	T
35	KB-8F 4R	4950	161	215	30000	8670	8.25/20D	9.00/20	Own RED361	6–4 ⅛x4 ⅛	361	6.3	282	126–3000	7-3¾x10‡‡	Y	Own F52	5	Own RF1560	8F	H	6.50–7.16	Own F550	LH61HV	644	1105	c	PX	84	9 ½x3 ⅞x ⅜	T
36	KB-11F 4R	7425	161	215	41000	10830	9.00/20D	10.00/20	Own RED450	6–4⅝x5	451	6.3	360	148–2600	7-3¾x10‡‡	Y	Own RF1670	8F	H	** –7.16	Own F760	LH61HV	738	1179	G	PX	84	10x3 ⅞x ⅜	T
37	W4064L	12925	203	239	40000	15750	10.00/22	11.00/22	Cum HB600	6–4½x6	672	17	492	150–1800	7-4½x....	Y	Spi 7741	4	Tim SW3012	WF	L	4.71–6.16	Own 82F	BW61A	876	.....	.....	PX	108	10x3 ½x ⅞	C
38	W4564OH	13750	188	242	45000	16635	10.00/22	11.00/22	Cum HB600	6–4½x6	672	17	492	150–1800	7-4½x....	Y	Spi 7741	4	Tim SW456	WF	H	6.00–7.6	Own 83F	BW61A	1020	.....	.....	PX	90	10x3 ½x ⅞	C
39	W6564OH	15700	206	302	65000	19895	11.00/24	12.00/24	Cum HB600	6–4½x6	672	17	492	150–1800	7-4½x....	Y	Spi 7741	4	Tim SD466	2F	H	8.15–11.66	Own 82F	BW61A	....	.....	.....	PX	108	10x3 ½x ⅞	L
	Kenworth																														
40	(D) 522		187	245	43000	12900	10 00/20	11.00/22	Cum HB6	6–4½x6	672	17	500	150–1800	7-4½x16½	Y	BL 8241	4	T U200P&††				Tim FE900	Ws41A	1135	.....	.....	.....		9 ½x3 ¼x ⅞	....
41	(D) 523. 4R		193	241	41000	14600	10.00/20	11.00/22	Cum HB6	6–4½x6	672	17	500	150–1800	7-4½x16½	Y	BL 8241	4	T SW3012PA	WF	R	** –6.16	Tim FE900	Ws4rIA	924	1248	a	TD	102	9 ½x3 ¼x ⅞	C
42	(D) 524. 4R		193	241	54000	15100	10.00/20	11.00/22	Cum HB6	6–4½x6	672	17	500	150–1800	7-4½x16½	Y	BL 8241	4	Tim SW456	WF	R	6.0 –7.6	Tim FE900	Ws4rIA	819	1192	a	TD	102	9 ½x3 ¼x ⅞	C
43	(D) 548. 4R		193	241	54000	17000	11.00/22	12.00/24	Cum HB6	6–4½x6	672	17	500	150–1800	7-4½x16½	Y	BL 8241	4	Tim SDF460	DR	R	** –8.15	Tim FE900	Ws4rIA	819	1192	a	TD	109	9 ½x3 ¼x ⅞	dbC
44	(D) 552. 4R		255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6–4½x6	672	17	500	150–1800	7-4½x16½	Y	BL 8241	4	Tim SDF460	WF	R	** –8.15	Tim F3200W	Ws4rIA	1109	1192	a	TD	108	9 ½x3 ¼x ⅞	dbC
45	(D) 584		193	241	95000	24800	12.00/24	14.00/24	Cum HB6	6–4½x6	672	17	500	150–1800	7-4½x6½	Y	BL 7841	4	Tim SD472	WF	R	8.07–11.56	Shu 12	Ws 4rIA		2235	a	TD	109	9 ½x3 ¼x ⅞	dbC
46	(D) 825		193	241	42000	14900	10.00/20	11.00/22	Cum HB6	6–4½x6	672	17	500	150–1800	7-4½x16½	Y	BL 8241	4	T GSW458P	WF		6.0–7.6	Tim FE900	Ws4rIA	1016	....	a	TD	102	9 ½x3 ¼x ⅞	C
47	829		186	234	42000	14650	10.00/20	11.00/22	Bud LO525	6–4¼x5½	525	5.5	385	150–2200	7-3x11¼	Y	Fu5A620	5	T SD3010P	DR	R	–8.27	Tim FE900	Ws4rIA	924	....	a	TD	104	9 ½x3 ¼x ⅞	....
48	(D) 888		219	....	110000	29400	14.00/24		Cum NHB6	6–5½x6	743	17	575	200–2100	7-4½x6½	Y	BL 7841	4	Tim CDB79	WF	C	**–14.71	Shu 12	Ws4rIA	....	2447	a	TD	129	10¾x3½x⅛	dbC
	Marmon-Herr.																														
49	(C) R5-6		156	....	22500	▲6850	7.50/20D	7.50/20	Ford	8–3 ⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	82 ⅞	7 ½x3x ¼	C
50	(C) R6-6		180	....	22500	▲7100	7.50/20D	7.50/20	Ford	8–3 ⅞x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	106 ¼	7 ½x3x ¼	C
51	MH440-6		182	....	34000	▲10600	9.00/20	10.00/20	Her WXLC3	6–4¼x4¼	404	5	239	118–2800	7-2⅜x13⅛	Y	Fu–MH31	5	Own 1123	2B	H	** –8.43	Own 121	Ws. .A	876	....	C	F	96	9 ¼x3x ¼	T
52	MH-555-6		182	....	42000	▲14000	11.00/20	11.00/20	Her RXC	6–4¾x5¼	529	6.3	390	131–2200	7-3x13¼	Y	Fu–MH33	5	Own 1124	2B	H	** –8.15	Own 122	Ws. .A	1092	1608	....	F	93	10 ⅞x3x ⅞	T
53	(C) R5-COE6		156	180	22500	7350	7.50/20D	7.50/20	Ford	8–3 ⅞x3 ¾	239	6.4	180	100–3800	3–2 ⅛x4.71	N	Ford	4	Ford	S	H	6.67	Own	F...H	303	563	A	F	106.1	7.08x2.8x ¼	T
54	(C) Q-5-6		160	....	35000	▲9550	9.00/20	10.00/20	Ford	8–3½x4 ⅜	337	6.4	255	145–3600	3–2⅛x5.21	Y	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	....	F	85	9x3x ¼	T
55	(C) Q-6-6		184	....	35000	▲9700	9.00/20	10.00/20	Ford	8–3½x4 ⅜	337	6.4	255	145–3600	3–2⅛x5.21	Y	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	....	F	109	9x3x ¼	T
56	Q-5L-6		172	....	35000	▲9650	9.00/20	10.00/20	Ford	8–3½x4½	337	6.4	255	145–3600	3–2½x5.21	Y	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	....	F	.....	9x3x ¼	T
57	Q-6L-6		203	....	35000	▲9825	9.00/20	10.00/20	Ford	8–3½x4½	337	6.4	255	145–3600	3–2½x5.21	Y	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	....	F	.....	9x3x ¼	T

▲ Includes Cab.
‡‡ Overdrive optional.
• Complete vehicle with pick-up type body.
†† Timken T13126 PA Trailing Axle.
▼ Auxiliary transmission Spicer 703F with 3 forward speeds.
° Auxiliary transmission Spicer 6231B at extra cost gives 15 forward speeds
△ Torque divider, Timken T70–2 speed.
■—1091 cu. in.
‡ Three speed transmission—2 speed transfer case.
▼ Timken T77 2-speed Transfer Case.
‡—Timken T76-Two speed transfer case.

(Turn to Page 98, Please)

KELSEY-HAYES

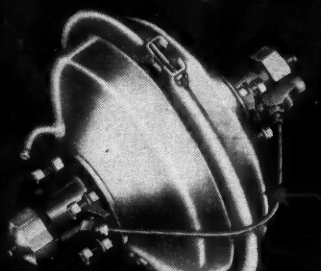
REMARKABLE NEW 130R-POWER BRAKE UNIT VACDRAULIC

with the New and Exclusive Safety System!

An Outstanding Advancement in Brake Power Units . . . Specially Designed for Light Truck and Passenger Car Hydraulic Brake Systems

- What other brake power units do . . . Model 130R does better!
- Returns any fluid (escaping in to unit) back into master cylinder!
- Numerous added features assure superior performance, greater safety!
- Cuts in and out faster for better control in traffic and emergency.
- Cuts in lower, yet develops more power under "feather-touch" pressure.
- Less likely to need service than any other brake power unit.

This new *Model 130R* Vacdraulic Brake Power Unit is the only brake power unit on the market engineered to nullify the effects of brake fluid contamination, and its resulting excessive cup wear. By immediately trapping any fluid (which might ordinarily get past the cups) and promptly returning it to the master cylinder, this new Model 130R lubricates the cups and maintains more than enough power-full braking pressure for any emergency.



The Only Brake Power Unit With An Added Protection Against Fluid Leakage!

Installation kits for all popular makes of cars and light trucks available from your K-H Distributor. Ask him for detailed literature.

K-H ASSURES PROVEN PRODUCTS AT

KELSEY-HAYES WHEEL COMPANY

DETROIT 32, MICHIGAN

PRODUCTS: Wheels—Hub and Drum Assemblies—Brakes—Vacuum Brake Power Units—for Passenger Cars, Trucks, Buses—Electric Brakes for House Trailers and Light Commercial Trailers—Wheels, Hubs, Axles, Parts for Farm Implements.

PLANTS: Kelsey-Hayes Plants in Michigan (4); McKeesport, Pa.; Los Angeles, Calif.; Davenport, Iowa; Windsor, Ontario, Canada.

(Continued from Page 96)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	TRANSMISSION: Forward Speeds	REAR AXLE: Make and Model	REAR AXLE: Gear and Type	REAR AXLE: Drive & Torque	REAR AXLE: Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	BRAKES SERVICE: Lining Area	BRAKES SERVICE: Drum Area	BRAKES SERVICE: Drum Material	BRAKES: Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	FRAME: Type
	Oshkosh																															
1	W703-6X6		Opt	Opt	47000	16950	11.00/20D	12.00/20	Her RXLD	6–4¾x5¼	558	5.4	430	150–2200	7–3½x13¼	Y	Fu 5A650	12	Tim SD454W	2F	H	** –6.31	Own-Tim	L6IH	1080	1625	G	TX	Opt	10 ¼ 3 ½	⅝	B
2	(D)...W1600BD		245	Opt	60000	22770	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT6IA	1080	1625	G	TX	160	12½–3	⅝	B
3	(D)..°°W1600BDH		267	Opt	60000	24300□	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT6IA	1080	1625	G	TX	174	12½–3	⅝	B
4	(D)..°°W1602BDH		272	Opt	95000	29300	14.00/24D	14.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD472	2F	H	** –13.9	Own-Tim	LT6IA	....	2217	G	TX	177	12½–3	⅝	B
5	W1600BG		245	Opt	60000	22770	11.00/24D	12.00/24	Bu MO893	6–5¾x6	893	...	625	200–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT6IA	1080	1625	G	TX	160	12½–3	⅝	B
6	(D)...W1600CD		259	Opt	60000	23400□	11.00/24D	12.00/24	Cum 6HBI	6–4¾x6	672	...	500	150–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT6IA	1080	1625	G	TX	174	12½–3	⅝	B
7	(D)..W1600CDS		259	Opt	60000	23700□	11.00/24D	12.00/24	Cum 6HBIS	6–4¾x6	672	...	635	200–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT6IA	1080	1625	G	TX	174	12½–3	⅝	B
8	(D). °°W1600CDH		265	Opt	60000	24000□	11.00/24D	12.00/24	Cum 6HBI	6–4¾x6	672	...	500	150–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –9.82	Own-Tim	LT6IA	1080	1625	G	TX	172	12½–3	⅝	B
9	(D) °°W1600CDSH		267	Opt	60000	24300□	11.00/24D	12.00/24	Cum 6HBIS	6–4¾x6	672	...	635	200–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT6IA	1080	1625	G	TX	174	12½–3	⅝	B
	Peterbilt																															
10	(D).....350		193	Opt	42000	.....	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 8041	12	Tim SW3012W	WF	R	6.00– 8.5	Tim FE900DPA	Ws6IA	1125	1569	...	TD	99	10¾x3½x⅜		CT
11	(D).....360		198	Opt	54000	.....	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 8041	12	Tim SW456W	WF	R	6.00–10.2	Tim FE900DPA	Ws6IA	1005	1517	...	TD	104	10¾x3½x⅜		CT
12	(D).....370		198	Opt	58000	.....	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 8041	12	Tim SW456W	WF	R	6.00–10.2	T 27463	Ws6IA	1084	1626	...	TD	104	10¾x3½x⅜		CT
13	(D).....380		194	Opt	58000	.....	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 8041	12	Tim SD462W	2F	R	** –8.07	T 27463	Ws6IA	1084	1626	...	TD	98	10¾x3½x⅜		CT
14	(D).....390		197	Opt	79000	.....	12.00/24	14.00/24	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spi 8041	12	Tim SD472W	2F	R	** –8.07	T 27463	Ws6IA	1622	2215	...	TD	103½	10⅜x3½x⅜		CT
15	Reo.....D-216, 4R		167	203	28000	9170▲	8.25/20	8.25/20	Own GC310	6–3⅝x5	310	6.2	243	101–3000	7–2⅝x10.7	Y	Cla 205V-VO	5	Tim SBD1055	SF	T	6.16–7.4	Tim 32500	T6IHV▼▼	500	842	Var	TX	102½	9½x3 ⅛ x⅛		TfP
16	.....E-226R, 4R		150	203	34000	9782▲	8.25/20	9.00/20	Own 331-OA	6–4½x4½	331	6.4	264	140–3200	7–2½x9.41	Y	Cla 205V	5	Tim SBD1555	SF	T	6.16–7.4	Tim 32500	T6IVH▼▼	560	944	Var	TD	85⅝	9½x3⅛ x⅛		TfP
17	.....D-236, 4R		169	200	43000	13060▲	10.00/20	10.00/20	Con T-6427	6–4¼x4½	427	6.2	336	153–2800	7–2⅛x13.6	Y	Cla270V-VO●	15	Tim SD3010	SF2	T	7.5	Tim 36000	Ws6IA	1082	1570	Var	TD	104½	9½x3⅛x⅛		TfP
18	.....D-306, 4R		214	214	45000	15500▲	10.00/20	10.00/22	Con R–6513	6–4½x5½	513	5.9	400	173–2800	7–3¼x14.7	Y	Spi 6252A-53	5	Tim SD3010	SF2	T	**–7.5	Tim 36000	Ws6IA	1082	1570	Var	TD	136½	10¾x3½x⅜		Tf
19	.....D-316, 4R		186	248	56000	16000▲	10.00/20	10.00/22	Con R–6602	6–4¼x5½	602	5.9	464	203–2800	7–3¼x14.7	Y	Spi6252A-53‡	15	Tim SD454	SF2	T	7.33–8.15	Tim 36000	Ws6IA	1230	1778	Var	TD	108	10¾x3½x⅜		TfP
	Sterling																															
20	.....HBS130		164	183	32000	11000	8.25/20	10.00/20	Wau 6MZA	6–4⅛x4⅛	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	T-SBD1555DPH	SF	L	6.80–13.14	T-35011H	T6IHV	664	1134	A	TX	83	9x3 ⅛x ¼		A
21	.....HDS140		164	183	36000	11800	9.00/20	10.00/20	Wau 6MZA	6–4¼x4¼	404	5.6	290	130–3000	7–2⅝x12½	Y	Fu 5A43	5	T-SD3010PA	2F	L	6.84–10.22	T-35011TW	Ws6IA	1074	1554	A	TX	83	9x3 ⅛x ¼		A
22	.....HWS160		164	183	42000	12800	10.00/20	11.00/22●	Wau 6SRKR	6–4½x5½	517	5.5	536	125–2250	7–3x15¼	Y	Fu 5A62	5	T-SW3010PA	WF	L	5.40–8.50	T-36000TW	Ws6IA	1082	1574	A	TX	83	9x3 ⅛x ¼		A
23	.....HWS235		182	193	52000	15700	11.00/20	11.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86	4	T-SW456P	WF	L	5.67–8.20	T-27454W	Ws6IA	1308	1892	A	TX	92	9 ¼x3 ⅛x ⅛		A
24	(D)...HWS160H		182	193	42000	14250	10.00/20	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86	4	T-SW3012PA	WF	L	4.71–6.17	T-36000TW	Ws6IA	1082	1574	A	TX	92	9x3 ⅛x ¼		A
25	(D)...HWS235H		182	193	52000	16000	11.00/20	11.00/24	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86	4	T-SW456P	WF	L	5.66–8.20	T-27454W	Ws6IA	1308	1892	A	TX	92	9 ¼x3 ⅛x ⅛		A
26	.....HCS195		170	189	48000	15300	10.00/20	11.00/22	Wau 140GK	6–4½x5½	525	6.0	426	142–2200	7–3¼x13⅞	Y	Fu5A62-3A92	15	Own 195W	CD	R	6.04–7.31	T-36000TW	Ws6IA	1082	1802	A	TX	83	9 ¼x3 ⅛x ⅛		A
27	.....HCS265		182	193	60000	17750	11.00/20	12.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86♦	12	Own 265W	CD	R	9.21–13.16	T-27454W	Ws6IA	1060	1912	A	JX	92	9 ¼x3 ⅛x ⅛		A
28	.....HCS297		182	193	70000	20750	12.00/24‡	13.00/24▲	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86♦	12	Own 330W	CD	R	9.21–13.16	T-27454W	Ws6IA	1280	1988	A	JX	92	9 ¼x3 ⅛x ⅛		AL
29	.....HCS330		174	187	80000	23150	12.00/24	14.00/24▲	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86♦	12	Own 330W	CD	R	9.21–13.16	T-27454W	Ws6IA	1280	1988	A	JX	91	12x3 ⅛x ⅛		AL
30	(D)...HCS195H		182	193	48000	16000	10.00/20	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu4B86-3A92	12	Own 195W	CD	R	6.04–7.31	T-36000TW	Ws6IA	1082	1802	A	TX	92	9 ¼x3 ⅛x ⅛		A
31	(D)...HCS265H		182	193	60000	18100	11.00/20	12.00/24	Cum HBD600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86♦	12	Own 265W	CD	R	9.21–13.16	T-27454W	Ws6IA	1160	1912	A	JX	92	9 ¼x3 ⅛x ⅛		AL
32	(D)...HCS297H		182	193	70000	21050	12.00/24‡	13.00/24▲	Cum HBD600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86♦	12	Own 330W	CD	R	9.21–13.16	T-27454W	Ws6IA	1280	1988	A	JX	92	9 ¼x3 ⅛x ⅛		AL
33	(D)...HCS330H		174	187	80000	23450	12.00/24	14.00/24▲	Cum HBD600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B86♦	12	Own 330W	CD	R	9.21–13.16	T-27454W	Ws6IA	1280	1988	A	JX	91	12x3 ⅛x ⅛		AL
	Truckstell																															
34	(C)....F2X28.2F		156	237	28000	6468▲	7.50/20↓	8.25/20-10	Ford	8–3 1/8 x3⅜	239	6.8	180	100–3800	3–2.49x4.9	N	Ford	4	Ford■	SF	H	5.83–8.11	Ford	F6IHV	502	835	°	TX	82½	8x2.8x.46		TL▼▼
35	(C)F2X29-0(coe)2F		134	224	28500	7083▲	7.50/20↓	8.25/20-10	Ford	8–3 1/8 x3⅜	239	6.8	180	100–3800	3–2.49x4.9	N	Ford	4	Ford■	SF	H	5.83–8.11	Ford	F6IHV	502	835	°	TX	82½	8x2.8x.46		TL▼▼
36	(C) .F2X28-7.2F		156	250	28000	7897▲	7.50/20↓	8.25/20-10	Ford	8–3½x4⅝	337	6.4	255	145–3600	3–2.87x5.0	Y	Ford	5	Ford	HyF	H	6.8	Ford	F6IHV	560	935	°	TX	82½	9⅝x3x½		TL▼▼
37	(C) .F2X34-7.2F		156	250	34000	8100▲	8.25/20†	9.00/20-10	Ford	8–3½x4⅝	337	6.4	255	145–3600	3–2.87x5.0	Y	Ford	5	Ford	HyF	H	6.8	Ford	F6IHV	560	935	°	TX	82½	9⅝x3x½		TL▼▼
38	(C) .F2X34-8.2F		156	250	34000	8704▲	9.00/20	9.00/20-10	Ford	8–3½x4⅝	337	6.4	255	145–3600	3–2.87x5.0	Y	Ford	5	Ford■	SF	H	6.5 –8.87	Ford	F6IHV	695	1081	°	TX	82½	9⅝x3x½		TL▼▼
39	(C)....F2X40.2F		156	250	40000	9309▲	9.00/20‡‡	10.0/20-10	Ford	8–3½x4⅝	337	6.4	255	145–3600	3–x .87x5.0	Y	Ford	5	Ford■	SF	H	6.5 –8.87	Ford	F6IHV	835	1232	°	TX	82½	9⅝x3x½		TL▼▼
40	(C)....C2X28.2F		157	247	28000	6629▲	7.50/20D	9.00/20-10	Chev.	6–3 1/8 x3 11/16	235	6.6	192	93–3100	4 Std.Chev	Y	Chev.	4	Chev.▼	HyF	H	6.17	Chev.	C6IHV	530	808	°	2I	82¼	9⅝x3x½		C▼▼
41	(C)C2X29-0(coe)2F		130	224	29000	7204▲	7.50/20D	9.00/20-10	Chev.	6–3 1/8 x3 11/16	235	6.6	192	93–3100	4 Std.Chev	Y	Chev.	4	Chev.▼	HyF	H	6.17	Chev.	C6IHV	530	808	°	2I	82¼	9⅝x3x½		C▼▼
42	(C) F4X26.....4R		144	209	26000	7300▲	7.50/20	8.25/20*	Ford	8–3 1/8 x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Ford ⊟⊟	8	Ford	SF	R	**–6.67	Ford	F6IHV	498	836	Co	TX	64	8x3x.46		TL▼▼
43	(C) F4X27 (coe)4R		126	185	27000	7665▲	7.50/20	8.25/20*	Ford	8–3 1/8 x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Ford	8	Ford	SF	R	**–6.67	Ford	F6IHV	498	836	Co	TX	71	8x3x.46		TL▼▼
44	.....F4X29		144	209	29000	7850▲	7.50/20	8.25/20-10	Ford	8–3 1/8 x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Ford♦♦	12	Ford	HyF	R	**–7.2	Ford	F6IHV	498	836	Co	TX	64	8x3x .46		TL▼▼
45	.....F4X30		126	185	30000	8200▲	7.50/20	8.25/20-10	Ford	8–3 1/8 x3¾	239	6.8	180	100–3800	3–2.49x4.9	N	Ford♦♦	12	Ford	HyF	R	**–7.2	Ford	F6IHV	498	836	Co	TX	71	8x3x .46		TL▼▼
46	(C) F4X34.....4R		156	228	34000	10000▲	8.25/20	9.00/20*	Ford	8–3½x4⅝	337	6.4	255	145–3600	3–2.87x5.0	Y	Ford ⊟⊟	15	Ford	HyF	R	**–6.8	Ford	F6IHV	745	1169	Co	TX	82	9⅝x3x½		TL▼▼
47	(C) F4X38.....4R		156	228	38000	10650▲	9.00/20	10.00/20*	Ford	8–3½x4⅝	337	6.4	255	145–3600	3–2.87x5.0	Y	Ford ⊟⊟	15	Ford	HyF	R	**–7.16	Ford	F6IHV	825	1231	C	TX	82	9⅝x3x½		TL▼▼
48	(C) C4X28.....4R		151	217	28000	7500▲	7.50/20	8.25/20*	Chev.	6–3 1/8 x3 11/16	235	6.6	192	93–3100	4–St. Chev.	Y	Chev. ⊟⊟	8	Chev.	HyF	R	**–6.17	Chev.	C6IHV	506	780	Co	2I	68	9⅝x3x½		C▼▼
49	(C) C4X29 (coe)4R		125	192	29000	7865▲	7.50/20	8.25/20*	Chev.	6–3 1/8 x3 11/16	235	6.6	192	93–3100	4–St. Chev.	Y	Chev.	8	Chev.	HyF	R	**–6.17	Chev.	C6IHV	506	780	Co	2I	69	9⅝x3x½		CCC
50	.....C4X29		151	217	29000	8040▲	7.50/20	8.25/20-10	Chev.	6–3 1/8 x3 11/16	235	6.6	192	93–3100	4–St. Chev.	Y	Chev.♦♦	12	Chev.	HyF	R	**–6.17	Chev.	C6IHV	506	780	Co	2I	68	9⅝x3x½		CCC
51	.....C4X30		125	192	30000	8400▲	7.50/20	8.25/20-10	Chev.	6–3 1/8 x3 11/16	235	6.6	192	93–3100	4–St. Chev.	Y	Chev.♦♦	12	Chev.	HyF	R	**–6.17	Chev.	C6IHV	506	780	Co	2I	69	9⅝x3x½		CC

▲ Includes Cab.
‡ Rear only; Front 11.00/24.
● 6231 Spicer Auxiliary Transmission.
°° Hydraulic Coupling.
♦ Auxiliary transmission, Spicer 8031.
■ Two speed axle with vacuum shift.
▲ Rear only; Front 12.00/24.
‡ 8031F-G Spicer Auxiliary Transmission Available.
□ Chassis weights on duals Front, Center and Rear.
↓ Front only; Rear 8.25/20.
†† Front only; Rear 10.00/20.
⊟⊟ With Baumis auxiliary transmission.
▼▼—Lockheed type front and Timken dual primary rear brakes.
▼ Two speed axle available—6.13–8.10.
▼ Including slip-over reinforcing frame channels.
♦♦ With Baumis power divider.
° Composite Cast Alloy Iron.
§ Cast Alloy Iron.
* Single front dual rear.
● When 11.00/22 tires are required it is necessary to furnish 52 inch axle spacing.

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Bus Parts "a la Carte" . . . Tops in Efficiency

Continued from Page 68

Own Parts List Used

AFTER the foreman decides what parts he is going to need for the job at hand, or the job coming up, he consults a specially prepared parts list. This is our own list which we had mimeographed and distributed to foremen of the general repair area, the inspection bay, the unit overhaul department, and others who may have to requisition parts. The list, a specimen page of which is shown in Fig. 2, contains the names and numbers of all replacement parts by makes and models of the various buses in our fleet. The names of the parts are sufficiently descriptive to permit correct selection with maximum speed and minimum difficulty.

Whenever there is any doubt, the shop foreman has the opportunity to consult with the parts floorman before writing down any names or numbers. Inasmuch as the parts floorman knows what parts we carry, and how they are designated and numbered, he can help the foreman to specify the correct part. Moreover, being on the job, he can see exactly what the part looks like, if there should be any doubt about the number. This is double insurance that the proper part will be supplied without exchanges, as sometimes can occur due to errors in copying parts numbers.

Parts Bins Are Waist High

IN ADDITION to the parts requisition system, there are two features in our stockroom layout and system that make for greater efficiency. One of these is our waist-high parts bins. They are a great advantage over the old, conventional ceiling-high parts bins. For one thing, they eliminate the need for climbing on boxes or ladders to get parts out of arm's reach. Another big advantage is that the stockroom is brighter, eliminating the need for lights in every aisle.

Waist-high bins do not impede the circulation of air in the stockrooms and make the problem of heating in the winter and cooling in the summer much easier. They do not obstruct vision, so that it is possible to get full view of the stockroom at all times.

Not to be overlooked is the safety factor. Some time ago, one of our parts clerks tried to reach a part on the high shelves overhead by stepping on one of the lower bins and reaching up for the desired part. This was all that was needed to make the already top-heavy section topple over.

The bins, of all-metal construction, consist of 3-ft units. Eight of these units—four in a row, placed back to back—make up a section. There are nine sections located in the general stockroom area. In addition, we have a number of conventional steel shelving sections—four downstairs and 10 on the balcony.

Altogether 3200 items are carried in stock. This represents an investment of $25,000. As the fleet consists of 93 buses, of three different makes, this averages $270 worth of parts per bus.

Parts Reordering Simplified

ANOTHER feature that adds greatly to our stockroom efficiency is the simplicity with which our parts are reordered when their supply falls to our minimum requirement. As shown in Fig. 3, each parts bin contains a printed label bearing not only the necessary stock number designation but, also, shows what the minimum supply of that part should be. These labels are

(TURN TO PAGE 104, PLEASE)

WHAT COULD BE SIMPLER
OR EASIER TO APPLY THAN
ONE-PIECE Hansen EXTENSION LOCKS

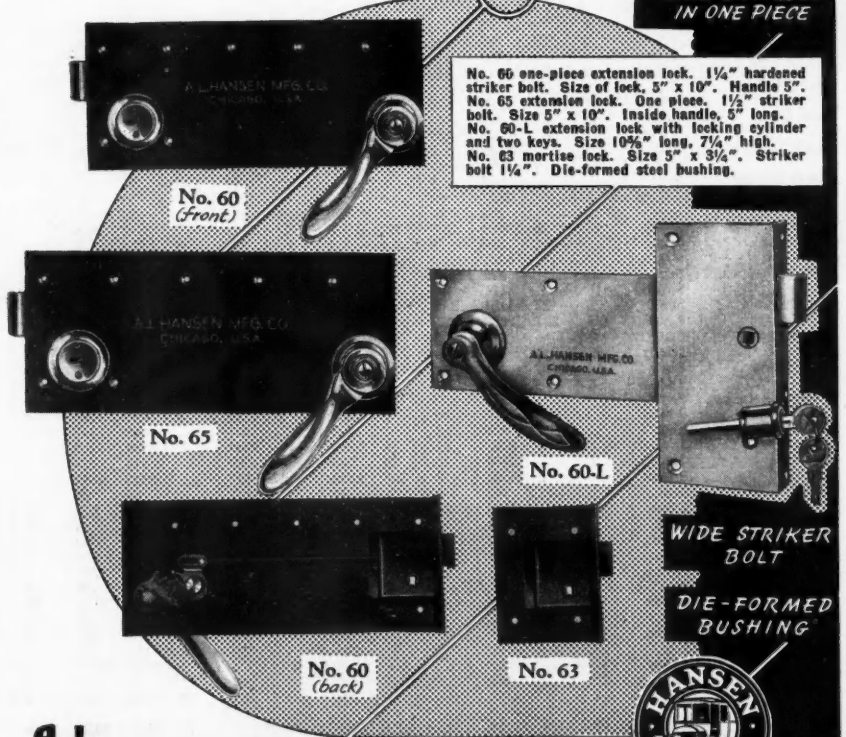
HANSEN Hardware is noted for its extremely simple design. The locks shown are made in one piece, including inside handle (except No. 63).

No loose parts. Self-contained. Compact, strong, easy to apply, these locks are built to withstand hard usage. Die-formed steel bushing. Wide, hardened striker bolts.

Hansen makes a complete line of commercial body hardware. *Write for catalog.*

NO LOOSE PARTS TO ASSEMBLE
NO COMPLICATED SPRINGS
MADE ENTIRELY IN ONE PIECE

No. 60 one-piece extension lock. 1¼" hardened striker bolt. Size of lock, 5" x 10". Handle 5".
No. 65 extension lock. One piece. 1½" striker bolt. Size 5" x 10". Inside handle, 5" long.
No. 60-L extension lock with locking cylinder and two keys. Size 10⅝" long, 7¼" high.
No. 63 mortise lock. Size 5" x 3¼". Striker bolt 1¼". Die-formed steel bushing.



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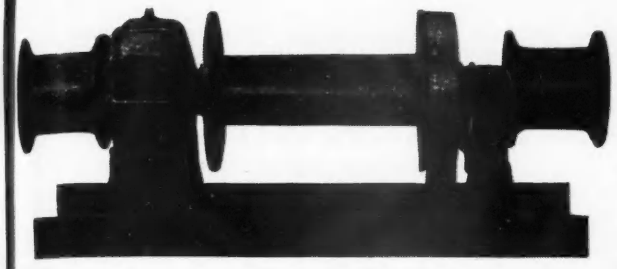
HANSEN HARDWARE for Commercial Bodies

New Truck Registrations by Makes by States*

STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Pon-tiac	Reo	Ster-ling	Stude-baker	White	Willys	All Others	Total
Alabama	Sept.			620			147		314		128	88		6		1		69	4	25		1,402
	9 Mos.	1		6294	15	14	1705	9	2682		1381	961		61	3	26		821	78	506	28	14,585
Arizona	Sept.			134	1		59		127		41	34				2		62	1	16		477
	9 Mos.	1		1396	4	16	502	3	995	2	344	254	3	4	1	23	2	399	14	178	39	4,180
Arkansas	Sept.			1038	3		235	1	680		232	179		7	1	4		134	3	29	1	2,527
	9 Mos.	2		7050	46		1705	3	3944	1	1575	1144		18	2	84		1066	29	728	27	17,424
California	Sept.	4		1951	35	33	615	3	1336	25	530	396	14	15	4	38	4	309	37	116	30	5,495
	9 Mos.	73	18	15784	194	346	5389	26	7492	40	4253	3006	96	140	14	163	48	3126	309	1166	254	41,937
Colorado	Sept.			438	10	1	120	5	267		185	97	1	1		4		91	3	56		1,279
	9 Mos.	1		3650	69	10	1183	14	1631	2	988	871	1	8	1	26		662	35	499	12	9,663
Connecticut	Sept.	3	4	170	4	7	95	3	118		41	65		11		7		31	2	31		592
	9 Mos.	35	22	1688	54	61	684	21	967	5	395	605		107	1	29	1	301	29	228	20	5,253
Delaware	Sept.	1	3	67			22		88		15	23		2	4	2		11	1	7	4	250
	9 Mos.	5	7	766	14	2	238	1	554		159	231		4	7	5		92	14	48	10	2,155
District of Col.	Sept.	1	1	89	3	3	36	1	41		7	27			2			3	1	7		222
	9 Mos.	25	6	677	17	47	363	17	436		172	225		27	9	12	3	53	28	52	10	2,179
Florida	Sept.			468	10	5	201		312		88	90		11		3		83	8	69	3	1,381
	9 Mos.	2		5113	90	40	1767	12	2486		939	1016		134	1	60		836	84	690	42	13,312
Georgia	Sept.	1		743	4	1	250		603		193	192		17	1	5		96	7	30		2,143
	9 Mos.	3	1	8052	93	12	2515	17	4978		1630	1888		132	32	110		1294	128	757	32	21,674
Idaho	Sept.			342	11		95		182	1	114	75	2	2		6		67	1	48	2	948
	9 Mos.	1		1758	71	1	652	7	871	9	667	613	35	13		29		547	13	480	24	5,791
Illinois	Sept.	1		1690	28	26	544	3	893		241	542		24	1	22		233	41	79	14	4,382
	9 Mos.	61	10	14701	393	202	4652	41	6883	14	2554	4651		143	13	217	2	2119	491	979	141	38,287
Indiana	Sept.			749	9	18	318	2	676		175	336		8	2	8		178	23	40	1	2,543
	9 Mos.	12	7	5999	84	108	2163	21	3516	2	1615	2347	1	84	9	88		1538	217	542	58	18,409
Iowa	Sept.	1		849	10	3	276	1	599	2	176	297		5	1	5		112	9	48	4	2,398
	9 Mos.	7		7393	134	26	2325	9	3742	11	1317	2477	1	60	8	63		1260	60	803	58	19,554
Kansas	Sept.			635	7		152	1	400		136	230			1	1		94	4	41	8	1,710
	9 Mos.		1	7199	76	17	1869	25	3155		1505	1959	1	8	10	60		1164	55	479	41	17,625
Kentucky	Sept.	2		800	7	2	187	1	484		215	206		5		4		93	3	67	4	2,080
	9 Mos.	5	1	5949	73	25	1622	17	3112	1	1419	1433		37	4	39		708	92	1133	36	15,706
Louisiana	Sept.			768	14		187	1	648		201	174		2	1	3		125	6	48	1	2,179
	9 Mos.	2		5258	82	13	1503	5	3516	2	1330	1143		45	3	23		967	64	488	50	14,494
Maine	Sept.	3	3	216		1	96		161		108	104		10	1	3		32	3	16		757
	9 Mos.	8	15	1660	3	7	528	5	857		598	544		57	5	42	1	266	35	166	13	4,810
Maryland	Sept.		8	281	4	7	130	1	175		47	80		18	1	2		24	9	18		805
	9 Mos.	31	46	2691	31	43	1121	28	1475		515	779		102	5	48	1	301	92	196	34	7,539
Massachusetts	Sept.	8	8	268	9	15	169		244	1	74	113		21		19	3	60	11	22	2	1,047
	9 Mos.	96	72	2880	59	117	1434	8	1912	7	651	985		184	3	78	37	552	187	218	18	9,478
Michigan	Sept.			1415	7	47	401	3	1170		242	270		32		9		136	29	41	1	3,803
	9 Mos.	24	3	10447	80	211	2888	44	6800	2	2058	1754		126	7	77		1121	151	526	97	26,416
Minnesota	Sept.			783	12	6	248	1	530		118	337		6		3		152	6	17	2	2,221
	9 Mos.	47		6679	74	48	1863	17	3455	4	1186	2198	5	118	8	19		1514	58	337	52	17,683
Mississippi	Sept.			626	2		124		337		161	115		3	1			69	4	33		1,475
	9 Mos.	1		5699	34		1515	3	2682		1537	998		26	1	24		745	29	495	24	13,811
Missouri	Sept.	1		1441	4	7	389		670		308	257				6		150	4	41	1	3,278
	9 Mos.	7	1	9849	62	79	2778	1	3885		2053	1881		44	3	97		1152	172	726	39	22,829
Montana	Sept.			209	8	4	56	1	149		77	102	1			3		67	3	43	1	724
	9 Mos.	5		2280	69	9	729	13	1261	7	777	835	14	4	1	51		552	21	688	19	7,335
Nebraska	Sept.			513	13		104		275		113	216		1	3	7		91	6	61	3	1,406
	9 Mos.		2	4816	205	3	1205	10	2370	7	1120	1742	9	13	5	25		979	53	830	45	13,439
Nevada	Sept.			37			28		48		29	10			1	1	1	17		9		179
	9 Mos.	1		429	2	1	150	2	298		160	109		2	1	4	1	154		97	6	1,425
New Hampshire	Sept.	2		85		3	33		72		20	24		7	2	6		8		12		276
	9 Mos.	6	7	830	15	16	319	2	580		217	252		43	3	15	1	93	8	109	5	2,521
New Jersey	Sept.	2	19	683	13	26	319	8	528		206	180		37	11	16	2	79	26	60	5	2,220
	9 Mos.	84	134	5227	132	115	1955	65	2931	14	1569	1582	1	283	42	70	6	652	249	597	87	15,795
New Mexico	Sept.			414	1		62		100		60	34		1		2		43	4	13	1	735
	9 Mos.	2		2295	29	3	676	2	748		564	349		18		13		389	27	135	29	5,279
New York	Sept.	13	61	975	51	28	609	2	717	2	289	410		90	5	43	5	151	92	97	8	3,651
	9 Mos.	274	492	10050	457	302	5734	126	6064	39	3169	3930		945	24	346	19	1642	769	1221	273	35,876
North Carolina	Sept.	1		898	2	7	361	2	746	2	234	185		50	4	22	2	159	30	73	18	2,798
	9 Mos.	13	1	7250	31	31	2042	11	4045	2	1273	1435		241	4	102	5	1022	149	655	124	18,436
North Dakota	Sept.			607	8		94	3	361		99	322				2		105	1	20	1	1,623
	9 Mos.	6		2707	64	3	614	20	1609		506	1187		2		9		524	8	261	10	7,531
Ohio	Sept.	10	1	1252	13	16	458	9	972		248	366		32	11	13		182	56	76	9	3,724
	9 Mos.	58	10	10629	165	270	3976	102	5713	7	1892	3028		166	44	121		1570	516	913	97	29,277
Oklahoma	Sept.			802	1	8	206		572		195	250		3		9		120	18	63	2	2,339
	9 Mos.	7		6301	22	29	2102	3	3118	6	1428	1715	1	23	11	60		1011	91	674	26	16,628
Oregon	Sept.			425	4	2	159	1	297		129	118	2	7		4		58	7	45	11	1,287
	9 Mos.	16		3371	39	30	1337	18	1901	4	1072	959	50	99	4	29	6	589	83	552	83	10,242
Pennsylvania	Sept.	26	23	1101	18	10	632	9	968	4	277	422		143		75		149	81	70	18	4,026
	9 Mos.	159	227	10903	252	65	5244	61	6718	8	2945	3606		596	1	223	20	1881	624	1037	174	34,744
Rhode Island	Sept.	1		92	1	5	38		51		10	28		8	2	8	1	9	4	6		264
	9 Mos.	49	3	811	31	74	381		535		167	328		55	8	24	9	143	37	108	16	2,817
South Carolina	Sept.			365	4	1	96		234		98	52		4		1		44	4	23	1	925
	9 Mos.	9		3620	23	11	1155	1	1784	3	783	593		83	3	18		434	58	262	17	8,860
South Dakota	Sept.			253	3	1	54	1	130		34	125		1		1		34		36		673
	9 Mos.			2170	90	3	637	6	1048	9	406	1092	6	5	1	13		430	7	419	28	6,370
Tennessee	Sept.			823	3	1	194		501		160	132		9	1	2		121	27	38	2	2,014
	9 Mos.	5	4	8363	82	25	2383	43	3567		2164	1999		135	10	128	1	1069	211	819	62	21,070
Texas	Sept.	7		2360	18	18	898	4	1887		910	784	1	28	1	5		338	67	197	33	7,556
	9 Mos.	56	2	18530	127	106	6835	16	10153		5530	4693	11	139	2	101		3165	354	2078	398	52,296
Utah	Sept.			142	2		63		101		57	68		1		3		32	8	22	6	505
	9 Mos.			1408	46	8	512	12	789	4	505	524	12	19	3	26	1	328	28	229	29	4,481
Vermont	Sept.			59	1		20	1	33		29	26	1		5		12		4	4		194
	9 Mos.	1	9	797	12	5	308	9	471	1	279	410	9	3	23		262	9	214	214	12	2,834
Virginia	Sept.	2	1	782	4	11	289	2	480		171	170		11	4	17		90	17	40	3	2,074
	9 Mos.	22	29	6433	51	34	1906	14	3182		1215	1291		107	5	58		827	117	582	47	15,900
Washington	Sept.	1		404	7	2	171		311		120	139	6	2	3	5		47	20	26	6	1,270
	9 Mos.	10		3462	57	43	1431	11	2127		1029	1122	45	38	6	49	10	678	86	505	61	10,770
West Virginia	Sept.			306	2	1	129	5	244		86	58		4	1	4		24	8	62	7	941
	9 Mos.	2		2749	32	11	1154	14	1684	16	720	622		27	3	30		337	54	773	39	8,287
Wisconsin	Sept.	1		789	7	11	214	1	450	4	141	256		4		12		117	12	38	7	2,064
	9 Mos.	13		6322	108	114	1811	21	2938	42	1196	2148		80	10	101	3	1043	139	482	116	16,747
Wyoming	Sept.			147	4		50		80	1	55	48	1			1		32	2	23		444
	9 Mos.	1		1165	54		353	2	573	4	294	345	3	7		16		233	8	306	9	3,373
Total	Sept., 1949	92	132	31084	382	337	10523	76	21345	42	7621	8852	28	650	70	424	18	4544	713	2100	220	89,253
Total	Sept., 1948	186	208	23704	947	426	10583	237	18978	40	7192	8504	38	669		756	18	4290	881	7031	439	85,108
Total	9 Months, 1949	1249	1130	281548	4047	2756	87903	938	138350	275	61827	69853	295	4821	344	3097	177	42611	6150	26744	2989	717,084
Total	9 Months, 1948	2074	2285	229421	8586	4535	87511	3458	161582	690	54747	101193	324	7839		9002	341	37754	9036	60788	4398	805,584

* Data from R. L. Polk & Co.



MODEL M9-18B

● MODEL M9-18B (at left) Rated Capacity or Safe Working Load: 18,000 lbs. Ideally suited for use on 1½ and 2 ton trucks. The famous BRADEN OIL-COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE is standard equipment.

OPERATION SAFETY

Shown here is an exploded view of the OIL-COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE. No detail has been overlooked to manufacture a precision-built brake that is unsurpassed for safety.

● Life, limb and property are often dependent upon the efficiency of a truck winch safety brake. That's why BRADEN has taken so much pains to perfect a *truly* SAFE brake that can keep the load under complete control at all times.

Ask Any Truck Winch Operator

● Write for FREE eight page cartoon booklet entitled "A Story of the Safest Winch Safety Brake." Write Department C-1.

BUY BRADEN—They Are Safer

BRADEN WINCH COMPANY
Post Office Box 1709

BRADEN Winches SERVICE AROUND THE WORLD

TULSA 1,
Oklahoma

Bus Parts "a la Carte"...

Continued from Page 101

made out in duplicate, and both placed into the label holder. Fig. 4 shows their use.

As the stock clerk removes parts from a bin, he is trained to glance at the minimum quantity notation typewritten on the label. If the part he removes brings the remaining number of parts down to the specified minimum, the stock clerk pulls out the duplicate label and places it into a letter tray for the stock control clerk's attention. When the stock control clerk sees the label, she knows that the supply of that item has reached our required minimum and she proceeds to reorder, as will be explained presently.

The use of the duplicate label is one of the best ideas we have ever tried out in the stockroom. No matter how busy the stockroom clerk is, it never is too much effort to pull out the label and toss it into the tray. Previously, he would have had to make out a reorder form, which he might do immediately if he had the time. If very busy, he might make a mental note to make out the reorder form later—if he didn't forget.

This system is new with us and, as yet, not in effect for every part carried. We started it as an experiment for all parts of one of the three makes of buses that make up our fleet. It has proved so successful that we now are in the process of setting up the same system, not only for the other makes of buses in our fleet, but for all other parts and supplies carried.

Parts Charge System

A GLANCE at Figs. 3 and 4 will show that we use two types of labels on our bins. The one described under our parts reordering system, and another which we call the "CD" label. This label refers, in part, to our method of charging-out parts. The initials "CD" stand for "Charge Direct."

We have mentioned previously, that with our present system of requisitioning parts the only clerical work required of the stock control clerk is the pricing of the parts issued. This pricing applies to specific bus replacement parts, such as, fuel pumps, ignition coils, bearings, etc. Small parts and general supply items such as ignition points, nuts and bolts, fuses, washers, cotter pins, and similar parts, are not charged to a specific vehicle or job. Such items, generally valued at 25 cents or less, are charged directly to our overall fleet maintenance account. The initials "CD," therefore, serve as a guide for the stock control clerk. The charge to the general maintenance account is made at the time the bills for such parts are paid.

This system of charging parts fits directly into our cost accounting system which is designed to give us overall

(TURN TO PAGE 106, PLEASE)

STAY on the road and KEEP moving with...

CLAW* TIRE CHAINS

They GRIP because they CLAW

They're tough... they last... and that famous CLAW edge design really bites into hard ice and snow. Ask the biggest car and truck fleet operators why they stick to CLAW chains year after year. CLAWS are "traction insurance" and cost a whole lot less than delays and accidents.

COLUMBUS McKINNON Chain CORPORATION

General Offices and Factories: Tonawanda, N. Y.

Plants at Angola, N. Y.; St. Catharines, Ont., Can.; Vereeniging, So. Africa

Behind his ears, too, Maxwell!

SELF-CONTROL STARTS HERE

and to restore ENGINE PERFORMANCE

OIL-CONTROL STARTS HERE

TO STOP OIL-PUMPING, REPLACE WORN CONNECTING ROD BEARINGS

An oil-pumper can come back and "lower the boom" on you if you neglect to check for—and replace—worn engine bearings on every reconditioning job.

Always check the engine bearings, first cause of oil-pumping. They let excess oil reach combustion chambers where it burns to power-stealing carbon on valves, spark plugs, pistons and rings. Give new rings a chance to do their own job . . . replace worn bearings with Genuine Federal-Mogul Oil-Control Bearings. They renew fine engine performance!

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

50th ANNIVERSARY FEDERAL Mogul

CONTROL OIL-PUMPING WHERE IT STARTS—REPLACE WITH

FEDERAL-MOGUL

OIL CONTROL **BEARINGS**

The Complete Line—
More Than 7000 Numbers

Engine Bearings (Main, Connecting Rod and Camshaft) • Bushings • Connecting Rod Exchange • Reconditioned Connecting Rods • Rebabbitted Connecting Rods • Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Bearing Metals • Laminated Shims

Bus Parts "a la Carte"...

Continued from Page 104

vehicle maintenance costs and operating costs by vehicle make, which we use as a general performance guide of the types of vehicles that make up our fleet. The small parts and supply items, we reason, require periodic replacement regardless of the make of vehicle and, consequently, serve no useful purpose in determining the economic operation of these vehicles. Inasmuch as a great number of the parts carried in stock fall into the "CD" category, we save much clerical work.

Stock Numbering System

THE arrangement of the parts bins follows the same system we use to group parts on our parts list and our parts control system. All front axle parts, for example, carry the index number 1; rear axle parts, number 2; and so on. To further simplify the location of the parts, figures 1, 2 and so forth, are placed on the end of each row of bins containing these parts, so that the right section can be spotted from almost any point in the stock room.

This system certainly expedites the finding of parts. The stock clerk merely looks on the requisition for the stock number, and turns into the right aisle, knowing that all such parts are grouped together.

Each bin is numbered consecutively, as much as size will permit. Thus, brake parts, such as front and rear blocks, are located next to each other. Brake drums, however, because of their size, are located in larger sections not in numerical sequence.

Some of the very large parts, such as springs and axle housings are not located in their respective sections. They are at one or the other end of the stockroom, where space is available nearest to where their related parts are kept. Since the demand for these parts is relatively infrequent, their location outside of their normal grouping does not cause any confusion.

In addition to numbering the bins, the layout of all sections follows our general stock numbering plan. The bins start with parts in section 1 (front axle), at one end of the stock room and follow in numerical succession to number 22 (miscellaneous), with a few omissions, located at the other end of the room. This makes the location of many different parts an easy matter. The clerk starts at one end of the room and works to the other, eliminating time-wasting criss crossing.

The location of rebuilt component units is different from their individual parts. Rebuilt clutches, for example, are stocked in the unit repair department. A foreman wanting a complete clutch first will call the unit repair department. If none is available there, he then contacts the parts floorman for a new one.

The location of the stockroom also contributes to overall efficiency. The shipping and receiving platform is located in the center of one side of the room, facing the street. All deliveries, therefore, are made directly to the stockroom and the distribution of parts received is no more than 30 ft. from the receiving platform to the farthest corner of the stockroom.

Stock Control System

OUR parts control system operates on standard perpetual inventory methods, with a slight variation to limit the amount of clerical work required to keep it functioning efficiently. The type of form used is shown in Fig. 5. The information carried on these cards is the manufacturer's part number, our stock number, quantity purchase, withdrawal dates, minimum requirement,

(TURN TO PAGE 108, PLEASE)

Quicker! Safer! Lighter!

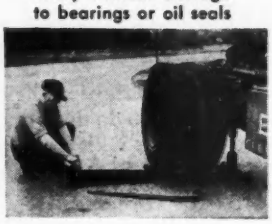
THE NEW DRUM *Safety* JACK

with SWIVEL ACTION

SPOT IT—under any axle, from any angle

SWING IT—Bring dollies into position for removing wheels without lifting

LEVEL IT—Pull wheels easily without damage to bearings or oil seals



ONE MAN does the work of two with this new, improved heavy-duty jack. No wheels to lift—no crawling under trucks. Works anywhere—under any wheel—on trucks or tractor-trailers.

Use the NEW Drum *Safety* Jack for dual wheels, single wheels or as a floor jack.

Send for descriptive folder today!

DRUM JACK CORPORATION

Subsidiary of The Cleveland Pneumatic Tool Company

3769 EAST 77th STREET • CLEVELAND 5, OHIO, U.S.A.

We would like to know more about the DRUM *Safety* JACK.

Company _____

Address _____ *City* _____

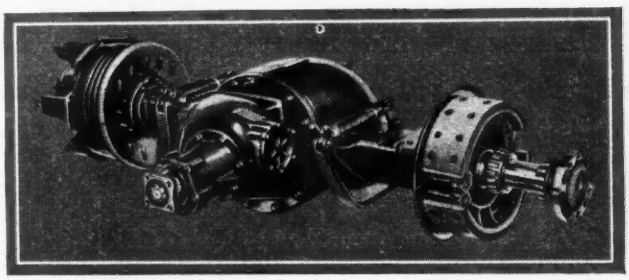
HERE IS WHY WHITES STAND UP ON THE REALLY RUGGED JOBS

WHITES LAST LONGER on the jobs that really test truck stamina. And the right model brings to every truck task the extra earning power that comes from Super Power fuel economy, low maintenance, and long life . . . the three basic factors that determine truck costs. On the-operating records of thousands of truck operators everywhere . . . in all lines of business . . . White Super Power is the best truck investment you can make. Compare price and earning power. Your local White Representative will show you how Super Power, correctly applied to your business, always *earns more, costs less.*

THE WHITE MOTOR COMPANY • *Cleveland 1, Ohio*
THE WHITE MOTOR COMPANY OF CANADA LIMITED • Factory at Montreal

Builders of the complete line of White Super Power and Diesel Power Trucks . . . the revolutionary White 3000 with the power-lift cab . . . city and intercity coaches . . . safety school busses.

QUALITY FEATURES *like this make the big difference in truck earning power*



RUGGED WHITE REAR AXLE . . . typical of the extra quality features of Super Power design throughout. Creative engineering and quality materials provide extra strength, greater dependability, longer life.

FOR 50 YEARS THE GREATEST NAME IN TRUCKS

Bus Parts "a la Carte"...

Continued from Page 106

source or sources of supply, when last order was received, and the last price paid. Instead of writing-in the make and model of vehicle to which the parts belong, we use a code number, which is shown at the top of the visible index used with the form.

This form comes in three sections. One section, used for recording all material issued from the store room, remains in the file at all times, so that a record of all daily parts withdrawals can be made. The other, or order section, is our automatic reorder form. The third part is the visible index.

When any part supply reaches the minimum—which is indicated by the stock clerk by withdrawing the duplicate bin label or, in case of any oversight, by the stock control clerk's own inventory figure—our procedure is to send the order section of the stock control card to the purchasing department. That signifies that the stock of that particular part is at minimum and must be reordered. This section contains all data needed for reordering. The quantities to be ordered to bring the supply up to par, the vendor, the last price paid, length of time required to fill order, etc.

The operation of the system is simplicity itself. Each morning the stock control clerk picks up the requisitions, gathered by the parts floorman, and the duplicate bin labels, both of which are to be found in the letter tray at the parts counter. The information obtained from the requisitions and labels is transferred to the stock control card. If any reordering is necessary, the clerk pulls out the order section of the control form, places it in an envelope addressed to the purchasing department.

When the parts are ordered, the purchasing department returns the order section to the stock control clerk, who returns it to the file. When the parts arrive, the shipping memorandum goes to the stock control clerk who records the necessary data on the stock control card. That's all there is to it.

The total personnel of our stockroom comprises one storekeeper, two clerks, one of which is the parts floorman, and one parts control clerk. The combination of the staff and the system has overcome every major stockroom problem encountered in the past. It is flexible enough to accommodate with ease an appreciable growth of our fleet.

END

(Please resume your reading on P. 69)

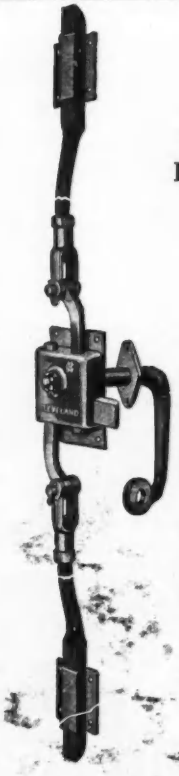
"Cleveland"

a name known for years and years indicating the best in Truck Irons and Hardware. When durability and long-wear is needed, the name "Cleveland" is specified by Fleet owners and Body Builders.

No. 2385 The Wedge DORLOK

For medium sized bodies.

Easy action. Tough forged bolts wedge the door tightly closed. Cadmium-plated for long wear.



No. 2392-A Heavy Duty Lock

For large bodies.

A sturdy three-point drop forged lock. The best that can be made! Cadmium-plated against rust.

Send for Catalog 22 B1 covering Truck Forgings or Catalog 18A covering Automotive Forgings.

THE CLEVELAND HARDWARE and FORGING COMPANY

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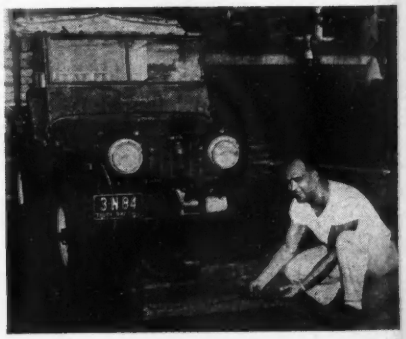
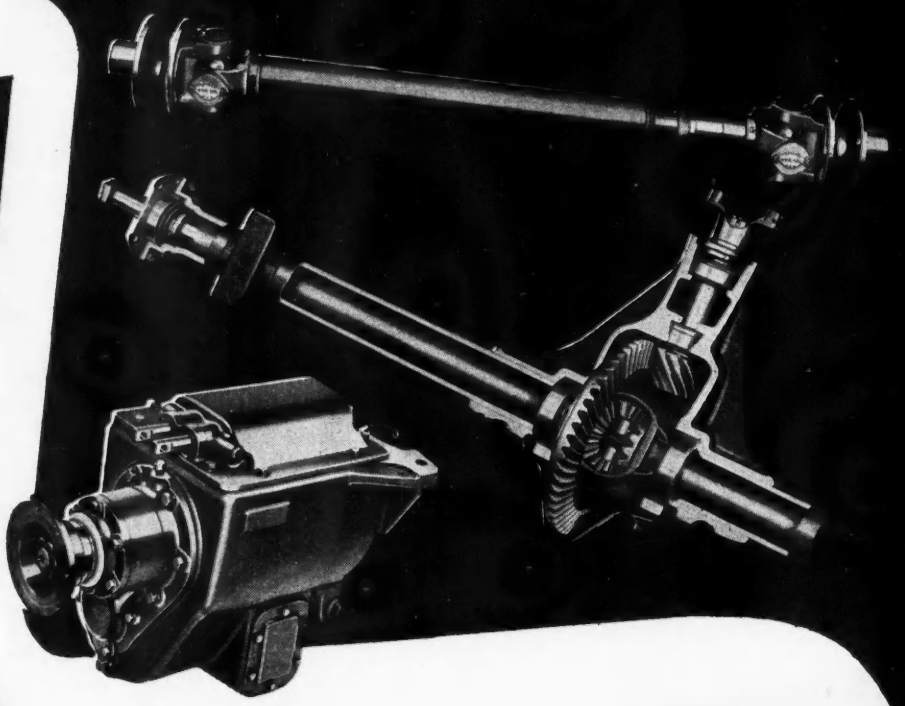
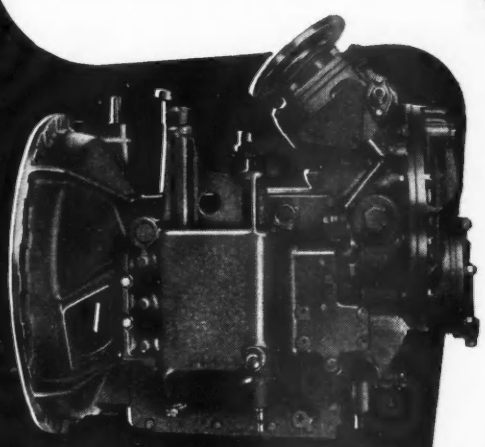
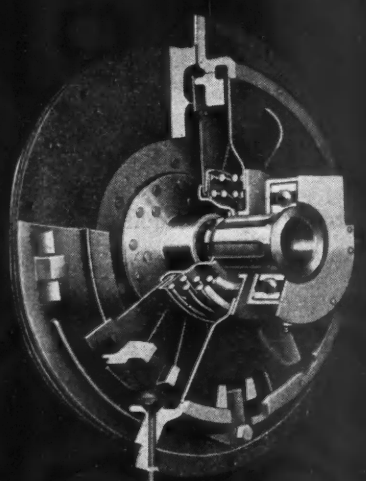
Magnetic 'Sweep Jeep'

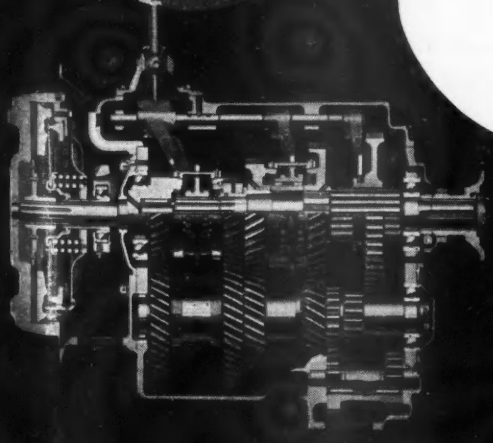


Tire damage on parking lots in Toledo, Ohio, has been cut down substantially by using the 'Jeep Sweep' to clear away jagged metal bits by a magnetic process. Stanley W. Smale, who drives for a local trucking firm, started this spare-time business after mounting a powerful 1000-lb magnet to the front end of a Willys Jeep. A two-kilovolt generator is located in the bed of the jeep, and handy dashboard controls enable raising or lowering the magnet over nail-infested areas. Some 1200 lb of metal and nails have been gathered up from a single truck terminal, and now Smale has found his service much in demand. During the winter, he plans to convert the vehicle with plows for snow clearing









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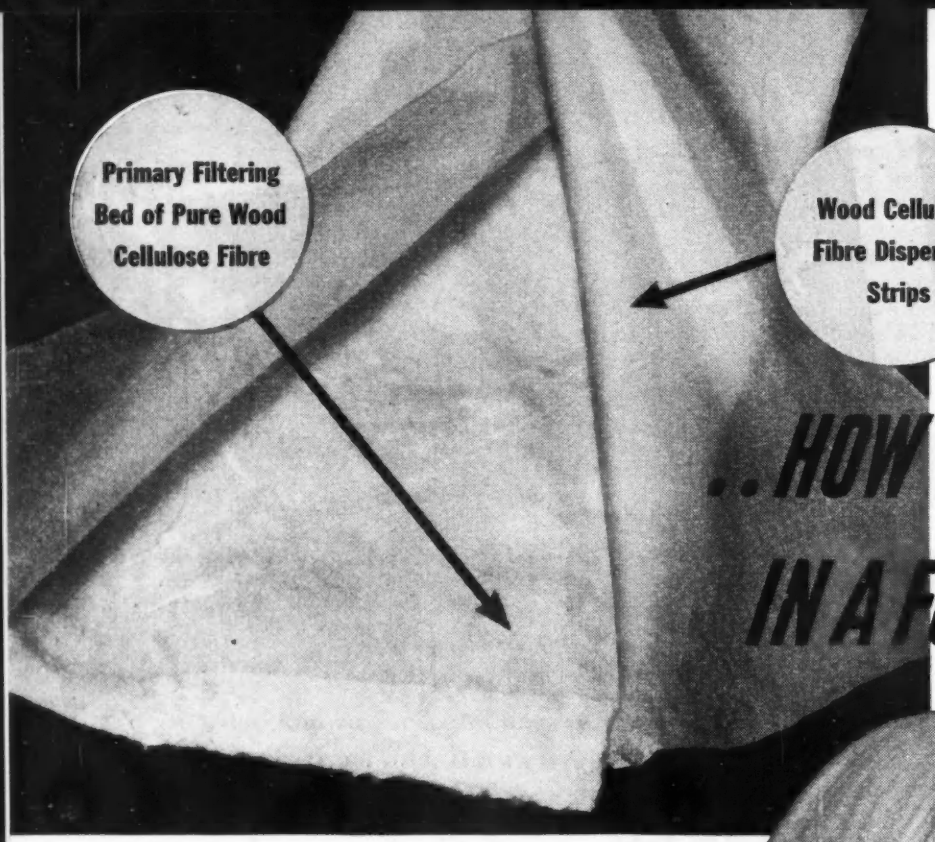
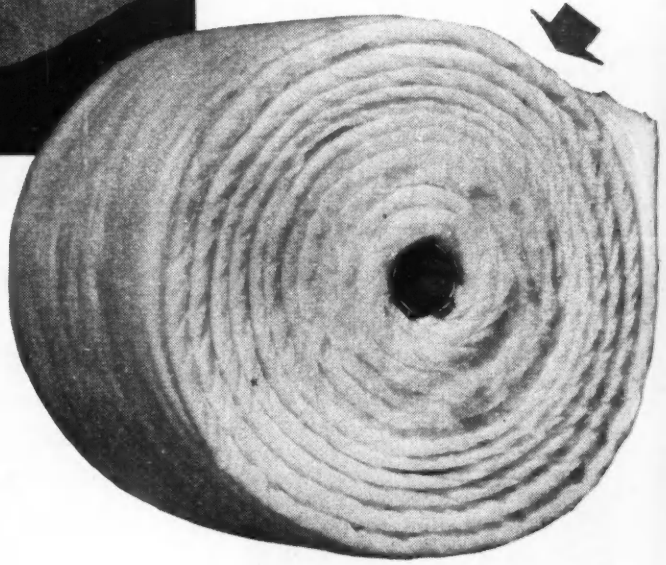


SEE ..HOW THIS MATERIAL IN A FORM LIKE THIS



● Inside every Walker "Laminar" Cartridge is an entirely new type of filtering material . . . a combination of pure wood cellulose fibre in *two different forms!*

This new "Laminar" material is chemically pure —will neither alter nor affect the characteristics of the oil itself.

It is positively uniform in structure to maintain the proper density. It has a definite affinity for dirt, contamination and moisture—to control the many different types of "engine manufactured" contamination, including water. It provides a filtering bed capable of removing even the tiniest foreign particles—yet still maintains a proper balance between "flow" and "particle retention" for effective filtration.

Wood cellulose fibre is the *only* filtering material to adequately meet these standards—the *only* filtering material that permits multiple filtration. It's the basis of Walker's superior filtering performance.

But even this combination of a pure wood cellulose fibre filtering bed wrapped in cellulose fibre dispersion strips is not the whole story. It is spirally wound in *many layers* around the center tube. From this patented construction has come an entirely new method of filtering oil—"Laminar"—or filtration through layers. It combines, for the first time, all three basic essentials of effective oil filtration—surface filtration—depth filtration—and progressive filtration. Laminar gets oil cleaner *quicker*—keeps oil cleaner *longer*.

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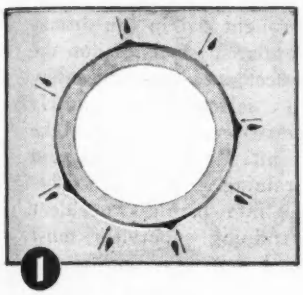
FOR YOURSELF...

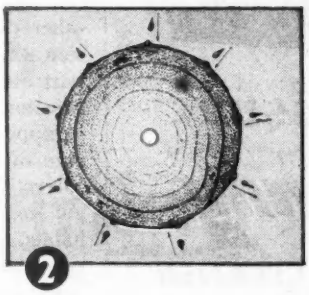
CLEANS OIL 3 WAYS!



1

SURFACE FILTRATION

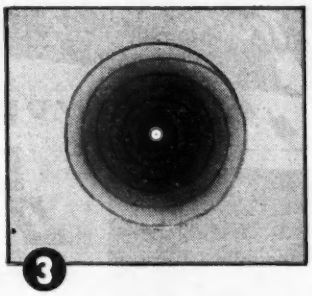
When oil enters the Walker cartridge it immediately encounters double-wrapped wood cellulose dispersion strips . . . which not only provide definite surface type filtration, but also disperse the oil over the entire surface of the filtering medium.



2

DEPTH FILTRATION

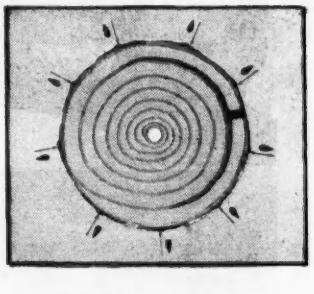
After passing through the dispersion strips, the oil is next subjected to depth filtration through the basic filtering bed of pure wood cellulose fibres—the density of which is controlled for a proper balance between "flow" and "particle retention."



3

PROGRESSIVE FILTRATION

As each successive layer is wound around the center tube, compression forces the pattern of the filtering bed to become finer and finer, more compact from outside to center . . . selectively removing smaller and smaller particles of micronic size.



CHANNEL-PROOF

Here's still another plus! Because of Laminar design, every Walker cartridge is absolutely channel-proof. There are no "low resistance" spots . . . no natural channels through which the oil can pass unfiltered. Should an accidental break occur in any single layer, the additional layers will prevent any channeling.

WALKER MANUFACTURING COMPANY OF WISCONSIN • RACINE, WISCONSIN

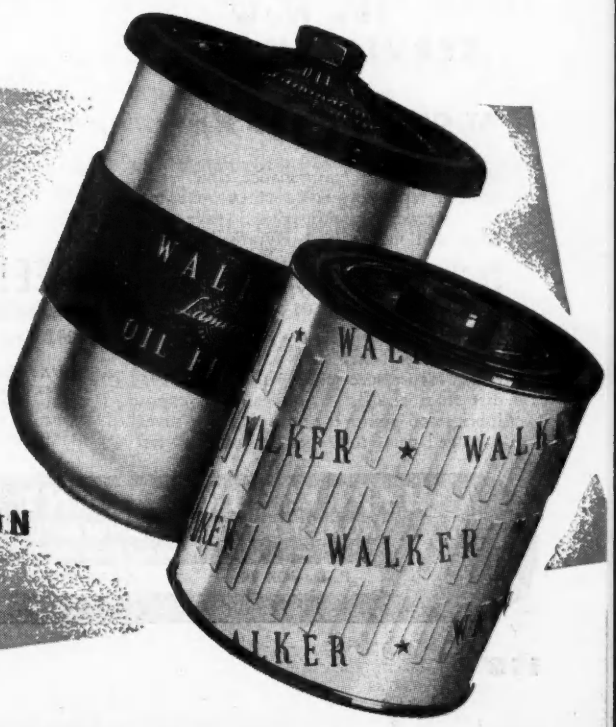
"AMERICA'S FINEST OIL FILTER"

WALKER OIL FILTERS

WITH PATENTED *Laminar** CONSTRUCTION

*TRADEMARK

TAKES OUT THE DIRT THE ENGINE PUTS IN



Spotlight on Safety Supervisors

Continued from Page 69

in insurance costs through the earning of lowered base rates; and the speaker reminded that, within the trucking industry, insurance costs vary from only two dollars per hundred of operating revenue up to nine dollars. Third, the indirect, yet important, result of helping to influence the "public relations" standards of the company, and the entire trucking industry, through establishing a local company reputation for having safe and courteous drivers.

Ketzel listed, as one of the essentials of a good safety director, a wholesome enthusiasm for the personal values from safe driving that will be so convincing to most of his drivers that they will cooperate in helping him to spot and eventually get rid of the few careless and unsafe drivers. The safety director must have or develop the kind of fairness and tactfulness that will enable him to see both the problems of the driver and the management; and then develop between them a fair and workable compromise. Ketzel ended his talk with these two summary questions to fleet safety directors: Can you measure your safety department progress in operating dollars and cents? Are you reporting these statistical results to top management?

The follow-up discussion brought the information that most drivers' unions today are apparently becoming more and more interested in the practical values from the driver physical and psychological tests that are being used. Thus, the unions are assured of getting a better class of driver members, more skillful and more reliable. From this viewpoint, the safety director must develop a records system from his selection tests and road operations broad enough and fair enough to be convincing to the union representative. Another point brought out in the discussion was the apparent slackness, on the part of some fleet operators and safety directors, in selection of poorly equipped supervisors of drivers, to take care of their initial road training and corrective retraining if they should begin to slump into careless accident habits. The training supervisor must have recognized superior qualities—a good driver and also a good teacher. Also, when a new driver is hired, special attention should be given to "selling" the importance of the company and the job advancement possibilities.

Human Engineering

Walter A. Cutter, from the Center for Safety Education at New York University, warned that it is a false theory to assume that drivers are concerned only with the "money side" of their job. They do want good pay and the assurance of steady employment, but they also want satisfactions from interesting work considered worthwhile, promotional opportunities, and extra values from fellow-worker companionships and evidences of appreciation from their superiors.

Accident Factors

D. J. Moffie, of the Department of Psychology at North Carolina State College, outlined four factors which will influence a driver's accident experience. They were vision, attitudes toward work, general intelligence and latent abilities. In the recent experiments with a six-weeks' driver training school being conducted at his institution, these factors are given special consideration. They have found that the average individual driver is anxious to know about his strong and weak points, both physi-

(TURN TO PAGE 114, PLEASE)

INCREASE ROAD TIME
REDUCE MAINTENANCE TIME
Keep Your Trucks Rolling and Earning
WITH HYPRESSURE
Jenny
STEAM CLEANER
MODEL JO DELUXE
A MODEL FOR EVERY PURSE AND PURPOSE INCLUDING
The New SERVICE MASTER
AT ONLY $359
You can reduce maintenance time . . . shorten repair lay-offs . . . cut overhead . . . increase pay mileage . . . save time, labor and money with Hypressure Jenny.
By eliminating hand wiping of tools and equipment Hypressure Jenny will save you up to 40% in repair time alone.
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There is a Hypressure Jenny model to suit your requirements at a price to suit your purse.
Full information is yours for the asking.
FREE! A postcard will bring you this booklet: "1001 Ways to Extra Profits"
It tells how Hypressure Jenny Steam Cleaner will help keep your fleet rolling and earning . . . reduce overhead . . . save you money.
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Ford operators naturally prefer Genuine Ford Parts, because they're *right* for Fords . . . made right to fit right and last longer. You'll save time when you use Genuine Ford Parts, and time is money! For example . . .

AVOID "MATCHING" PROBLEMS WITH GENUINE FORD LACQUERS AND SYNTHETIC ENAMELS

Because all Genuine Ford colors are carefully made to duplicate the original factory colors, there's no time-wasting trouble in matching patches in a touch-up job.

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Genuine FORD Parts... **Right for FORDS!**

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Safety Supervisors

Continued from Page 112

cal and mental. In the follow-up discussion, there was emphasis on the possibilities and values from the development of a "group attitude" which might become very important in the safety efficiency of associating drivers. However, there were admissions among the attendant psychology specialists that the substance and the development of such "attitudes" was difficult to define and still in the experimental stage.

Safety Meetings

Fred W. Eberle, of the State Board of Vocational Education of West Virginia, summarized some of the conditions to be met to develop in a driver the desire to come to a safety meeting. It must make a basic psychological appeal to his deeper interests. He needs to have a feeling of belonging. He wants personal recognition, a feeling that he is taking part in something of importance to him personally, that he is associating with important people, that the meeting is related to possible opportunities for his own earning power and job security and advancement. The meeting also must promise pleasurable activity.

Thus, to be able to stage such a meeting for his drivers, the safety director must know rather intimately what his group of drivers like and don't like. The general theme of the meeting must be tied in with these driver wants. The speaker listed the following, as some of the subjects that would appeal to an average group of drivers: New mechanical developments in the equipment that they now are driving or will drive. Improved methods in handling of platform freight. Present and possible future prospects in the particular line of business or industry with which the company is most closely associated in its trucking. Some of the factors and trends behind the Interstate Commerce Commission, about which they hear considerable in a general way. How does the company pick its supervisors, and what are the lines of company promotion? How does the company spend its money, and what planned improvements? The drivers also want to know something personally about his superiors—for example, the opportunity to shake hands with the boss.

The Safety Director's Duties

In the opinion of Professor Eberle, an efficient fleet safety director must be a "social statesman" with the ability to: make an interesting speech; lead a group discussion; create during the meeting a feeling of "group equality"; carry on stunts and skits to keep the meeting lively; efficiently handle such "props" as blackboards and charts; be a good reader, and look the audience in the face; prepare advance summaries and reports that the drivers could easily copy, on supplied suitable notebooks; expertly handle a picture projector; and do good blackboard writing.

The group meeting for drivers usually would be either of the "informational" type or the "recognition" type. In the recognition meeting, give the spotlight to the person or group of persons to be honored—for example, in driver safety awards. In the other type, the leader should not talk down to his drivers. Make each session instructive; plan a series of meetings; give the

(TURN TO PAGE 116, PLEASE)

Trucks Standing Idle Too Much??
IF SO, YOU WANT TO KNOW—
WHEN?
HOW LONG?
and WHY?
Well, first you must be able to SEE all the delays. You'll never be able to correct lost time which you don't know anything about! If you don't even know when these expensive idle periods are occurring, they will keep right on eating into your carefully planned delivery schedules.
But, equipped with the SERVIS RECORDER, you can know each day all delays and idle time—exactly as if you were riding on the truck yourself, all day long. Even better, the Servis Recorder gives it to you on paper—a graphic chart of what the truck did all day—a permanent record that you can file away for monthly study and comparison.
Besides checking idle time, the Servis Recorder helps in nine other ways—all fully described in our booklet—"Ten Ways of Getting More Work Out of Motor Trucks." It's free.
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The best way to begin getting better is to stop getting worse.

Under the Most Rugged Operating Conditions
You Can **Eliminate Hard Starting, Loss of Power and Speed-**
Caused by Inadequate Fuel Supply
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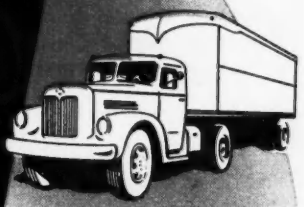
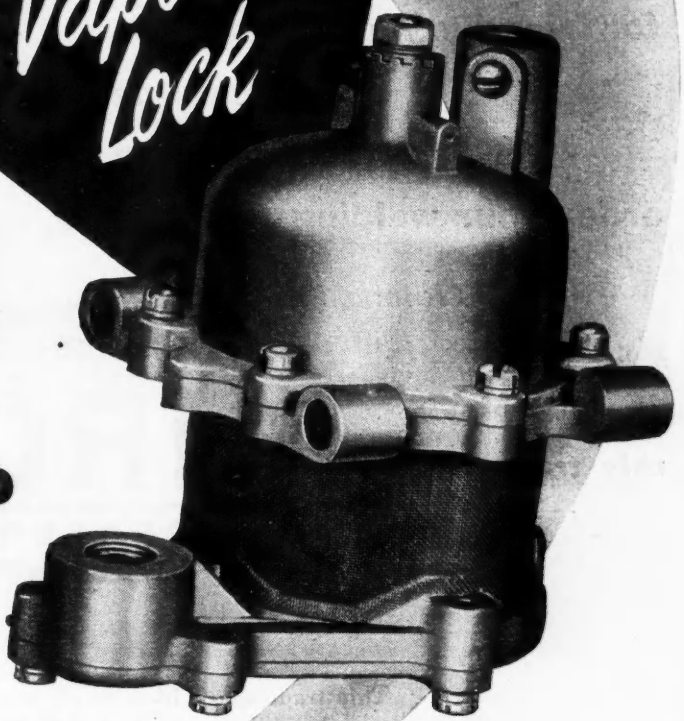


With the

CARTER
ELECTRIC PUSHER PUMP



The Carter Electric Pusher Pump is used as standard equipment on practically all gasoline powered buses and on thousands of trucks throughout the country.

Located at the bottom and inside the fuel tank, this motor-driven centrifugal pump keeps fuel in the line under constant, uniform pressure and fuel for starting is supplied to the carbureter instantly.

Conversion Kits for side-mount tanks simplify installation and servicing, and eliminate the necessity for installing new tanks.

CARTER CARBURETOR CORPORATION
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Division of American Car and Foundry Company

Safety Supervisors

Continued from Page 114

men note books and then develop simple blackboard outlines or designs that they can easily copy. "The most successful safety supervisors," concluded the speaker, "also are the best teachers."

The Maintenance Angle

Carl H. Walker, Supt. of Division of Sanitation, Detroit Department of Public Works, reported that he had found groups of drivers keenly interested in simplified explanations of the engineering principles of the trucks they operate. For instance, why an idling truck uses much more gasoline than usually assumed. Also, why there had been such large breakage of axles on one type of truck they were using, which resulted in modified driving practices that entirely eliminated this breakage; and even though, during his talk, there hadn't been a single mention of "safe driving."

Max R. Jensen, Supt. of Operations for Consolidated Freightways, Inc., was discussion leader in a "What's Your Problem?" panel discussion. The "experts" were Otis O. Barnes, Supervisor of Safety, Carolina Coach Co; C. D. Calkins, Dir. of Safety, Pacific Motor Trucking Co.; W. W. Carpenter, Safety Dir., Railway Express Agency, Inc.; Harold J. Ericsson, Dir. of Safety & Personnel Dept., Refiners Transport & Terminal Corp.; and Frank J. Wirken, Dir. of Safety, Interstate Bakeries Corp.

A question to the panel brought the information that some operators are presenting driver awards as soon as possible after being earned; and then a follow-up big annual safety meeting which the wives of award winners will attend. It was emphasized that road supervisors may have much influence in helping to develop the "safety attitude" of drivers. If respected, the drivers will make special effort to help them develop a good company safety record. Drivers in general dislike "road trailing," but it was assumed to have a good influence in accident control. It was stated that personnel selection and safety supervision are so closely associated that these activities usually should be unified. Also, the safety director should associate with company top management and report directly to the president; and the safety director must be familiar with company cost operating statements and budgets. Discussion brought out that 25 years is generally considered the minimum age limit for new drivers, with 40 years the top new-driver age limit. The years from ages of 35 to 50 were reported the "most reliable driver years."

I.C.S. Control of "Gypsies"

In a panel discussion I.C.C. Representative Reuben was asked about the Commission program to bring under control the reported considerable number of "gypsy or wildcat" trucking operators not requiring their drivers to keep or report "logs" of their daily work. He replied, in substance, that the Commission was making effort to catch up with such operators, realizing that some of them may be operating without authority. However, it could be assumed that some were operating leased equipment; and that the Commission had been trying to develop regulations on leasing, but that "the trucking industry doesn't yet seem to know just what leasing regulations they want."

Another questioner asked if the Commission was maintaining a road-checking program of driver hours-of-service by districts, considering the reported slackness by some trucking operators.

(TURN TO PAGE 118, PLEASE)

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Again Again Again

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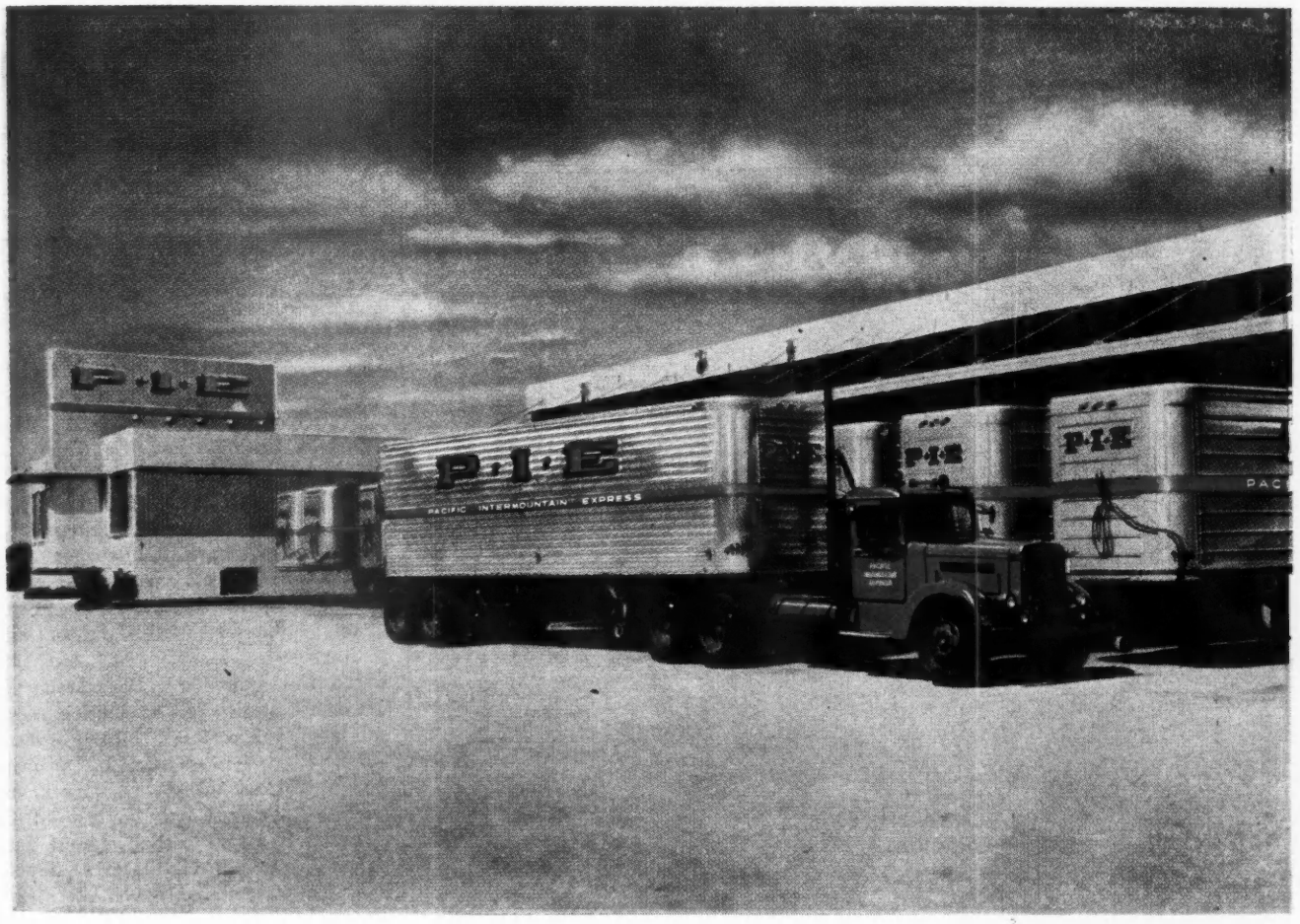


AGAIN in 1949, as in preceding years, Pacific Intermountain Express places a big order for Browns. And here's one reason, according to P.I.E. — on their fleet of Browns they have a minimum potential additional payload of more than 250 tons, compared with other types of trailers. That's conservative, too.

It's light weight and more pay freight which make Browns first with the big fleets—yes—the "scale tells the tale."

With P.I.E., maintenance and repair records tell a tale, too. They point to Brown's low cost maintenance and ease of repair — big factors in profitable big fleet operation.

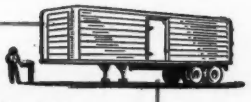
Brown's quarter-century experience with light metals—puts strength where it counts — without sacrificing light weight — a combination for bigger payloads and lower maintenance unmatched in the trailer field.

Here's once it pays to — "follow the leaders" — take a page from the experience of P.I.E. and other leading operators who buy Browns again and again and again.

Ask your local independent Brown distributor to show you how Browns will add to your payloads.

Brown distributors are located in all principal cities.

The Scale Tells the Tale



A parrot can scream — "My trailer weighs less." Brown stands on its slogan — "The Scale Tells the Tale." Yes — put a Brown on the scale — compare its light weight with any other trailer. Let the Scale Tell the Tale. You be the judge and jury, too. We'll stand on what the scale reads — compare that with mere claims.

Brown ALUMINUM TRAILERS

BROWN TRAILERS, INC. Spokane, Washington • Toledo, Ohio
Sales and Service in Principal Cities

Safety Supervisors

Continued from Page 116

Representative Reuben replied that, with only 25 safety inspectors available for the entire country, the Commission could not do systematic district road-checking, but were obliged to follow up in districts where there seemed the greatest immediate need; and they had a difficult job. "However," he added, "it is the duty of each individual carrier to see that his own operations are in conformity with ICC regulations."

Another question related to the Commission policy in the hold-up of trucking equipment at times of traffic emergency. The reply was that "the ICC inspectors have no police power." But it was their practice, in case of their presence at the scene of an accident involving serious injuries, to request the cooperation of local police in getting on-the-spot evidence.

National Safety Awards

A feature of a final session was the presentation of 41 first-place trophies as National Fleet Safety Contest Awards. A total of 1357 fleets finished this contest. They travelled a total of more than two billion miles and reported 64,713 accidents. For all fleets participating, there was an average frequency rate of 3.09, which was 15 per cent below the frequency rate of the previous annual contest. However, for the identical fleets which had participated in both these contests, there was an average accident reduction of 21 per cent. The best reported group improvement was by the Intercity-Truck-Petroleum division, with an improvement of 39 per cent. The lowest division rate was .61, made by the Intercity Truck-Private Carrier Division. In contrast, the highest rate (24.19) was reported by city operated common carriers.

At the annual election for the Commercial Vehicle Section, J. P. Hightower, Pennsylvania Greyhound Lines, was reelected general chairman. C. D. Calkins, Pacific Motor Trucking Co., was elected vice chairman; J. A. Ebling, Olson Transportation Co., is past chairman; and R. P. Austin, Ground Safety Division, 14th Airforce Headquarters, was reelected secretary.

The new regional chairmen are: Central—S. E. Pratz, Heldt Bros., Alice, Texas. Eastern—N. E. Aiken, Commercial Motor Freight, Columbus, Ohio. Southern—H. M. Clayton, Memphis Light, Gas and Water Div., Memphis, Tenn. Western—M. R. Jensen, Consolidated Freightways, Inc., Portland, Oreg. Chairmen of standing committees are: Program—F. J. Wirken, Interstate Bakeries Corp. Contest—H. T. Dornan, Bluebird Coach Lines, Inc. Driver Award—W. C. B. Merritt, Trucking, Inc. Membership—N. J. Bleau, Automobile Shippers, Inc.

END

Please resume your reading on P. 70

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Built for Heavy Duty Service

Thermoid Radiator Hose has proven to be better where it counts—on the road, under the toughest conditions. Precision made with Multi-Ply wrap, Thermoid Radiator Hose is impervious to hot water and anti-freeze. It lasts longer and lowers maintenance costs. Start saving money now by using Thermoid Radiator Hose on *all* your equipment.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

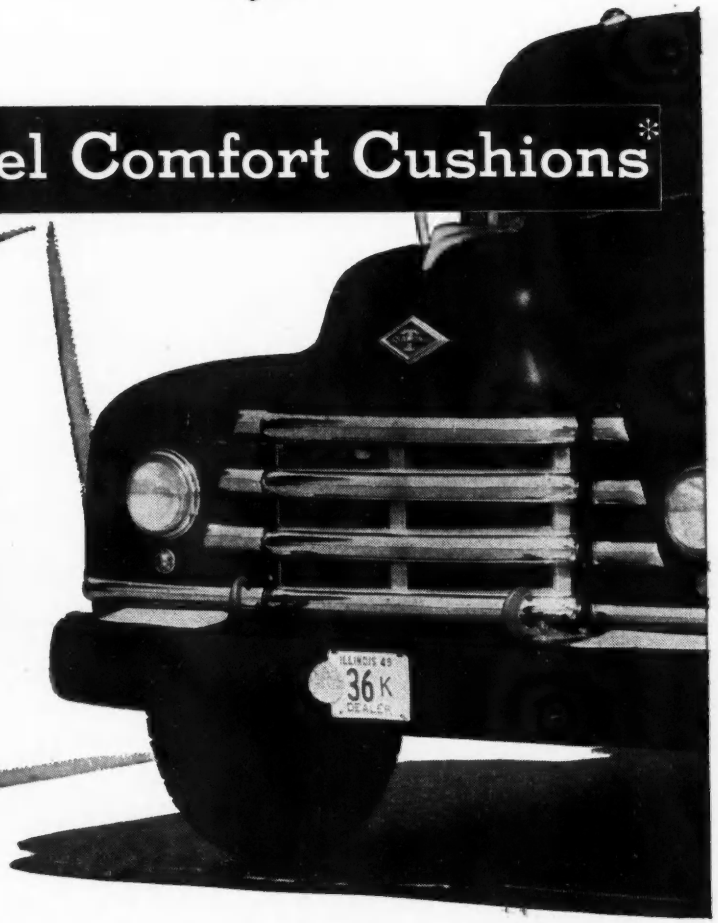
"Say I got a little room in my hip-pocket if you got anything else going my way"

DIAMOND T

Chooses

McInerney Travel Comfort Cushions*

for its 1950 SUPER-SERVICE LINE



Diamond T is a recognized pace-setter. The new 1950 Diamond T's are built to deliver super value, with more efficiency, more service and *more comfort* than ever before.

Diamond T knows that a comfortable driver is a better driver. They know the importance of having top quality truck seating. That's why Diamond T tested so many seats. Each seat was given the hardest possible treatment. It was tested for sustained comfort over the longest hauls, checked for fatigue reduction, given rough impact tests for durability, and carefully compared for construction details.

McInerney Travel Comfort Cushions won on all counts. All the new 1950 Diamond T's will be equipped with them.

Travel Comfort Cushions are engineered specifically for truck use. They provide unsurpassed comfort and long wear. Being scientifically designed to give proper body support, they cut down back strain and reduce riding fatigue. McInerney cushion spring constructions eliminate road shock and give years of riding comfort under severest conditions.

And, Travel Comfort Cushions are distinguished for their fine quality of materials and workmanship throughout.

*Registered U.S. Patent Office

TRAVEL COMFORT CUSHIONS

McInerney

SPRING & WIRE COMPANY

681 GODFREY, S. W. • GRAND RAPIDS 2, MICHIGAN

Diesel Cold Starting—Design and Fuel Problem

Continued from Page 72

Priming fluids are becoming increasingly popular, partially as the result of a growing tendency for engine builders to make the auxiliary equipment for their use available to the operator, and partially as the result of using inexpensive priming fluid (ethyl ether) which is already widely distributed to the extent that it can usually be purchased at any chemical supply house or even the corner drug store. By this means, diesel engines can be started at temperatures as low as —40 deg F (7,15); however, it does require the proper choice of lubricant and maintenance of the electrical system, such as the battery and starting motor, at the highest efficiency level.

The engine builder can assist by making continued improvements in the operation and performance of these auxiliary aids. On the other hand, he could perhaps contribute as much by placing increased emphasis on a study of basic engine design factors and their influence on cold starting. Among these factors are such items as cranking speed, compression ratio, injector characteristics and combustion chamber design. Of these, it is known that improvements in cold starting can be obtained by increasing compression ratio, although the values currently in use are optimum based on many important factors other than starting characteristics. Likewise, with the engine designs currently in use, perhaps little can be gained in the way of compression temperatures by increasing the cranking speed over the levels now available. Based on a few laboratory observations and on experiences described in the literature, it would appear that an investigation of combustion chamber design and injection characteristics might prove fruitful. The lack of published factual information on the subject is, however, very evident.

In contrast, the effect of fuel factors on cold starting has been studied extensively with the general realization that inherent shortcomings exist. Assistance from the fuel supplier could conceivably stem from improved fuel ignition quality, volatility, viscosity and poor characteristics, fuel additives, and priming fluids.

The conclusions based on data obtained while investigating these factors in a 3-cyl, 2-cycle engine of a type which is popular in the truck and bus field indicate that no "cure-all" for the diesel engine cold starting problem is in evidence. The current status of the problem may be summarized in the following manner:

1. Starting accessories such as glow plugs, jacket heaters, etc., are acceptable for some specific applications; however; it is felt that there is room for improvement in all of them with regard to reliability, ease of use or cost.

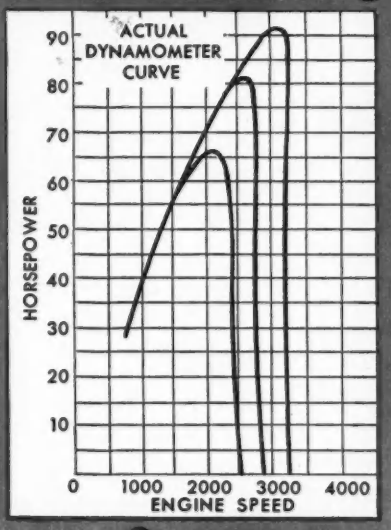
2. Diesel engine cold starting does not respond significantly to improve-

(TURN TO PAGE 122, PLEASE)

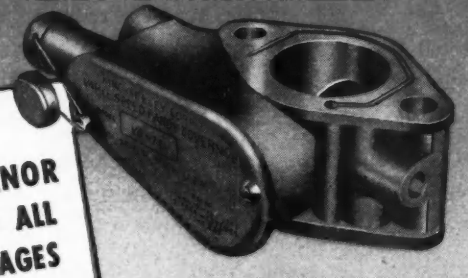
Vari-Speed

HANDY GOVERNOR

Characteristics and Advantages



1. No-load speed control.
2. Close regulation.
3. Minimum loss of horsepower.
4. Wide speed range with one governor model.



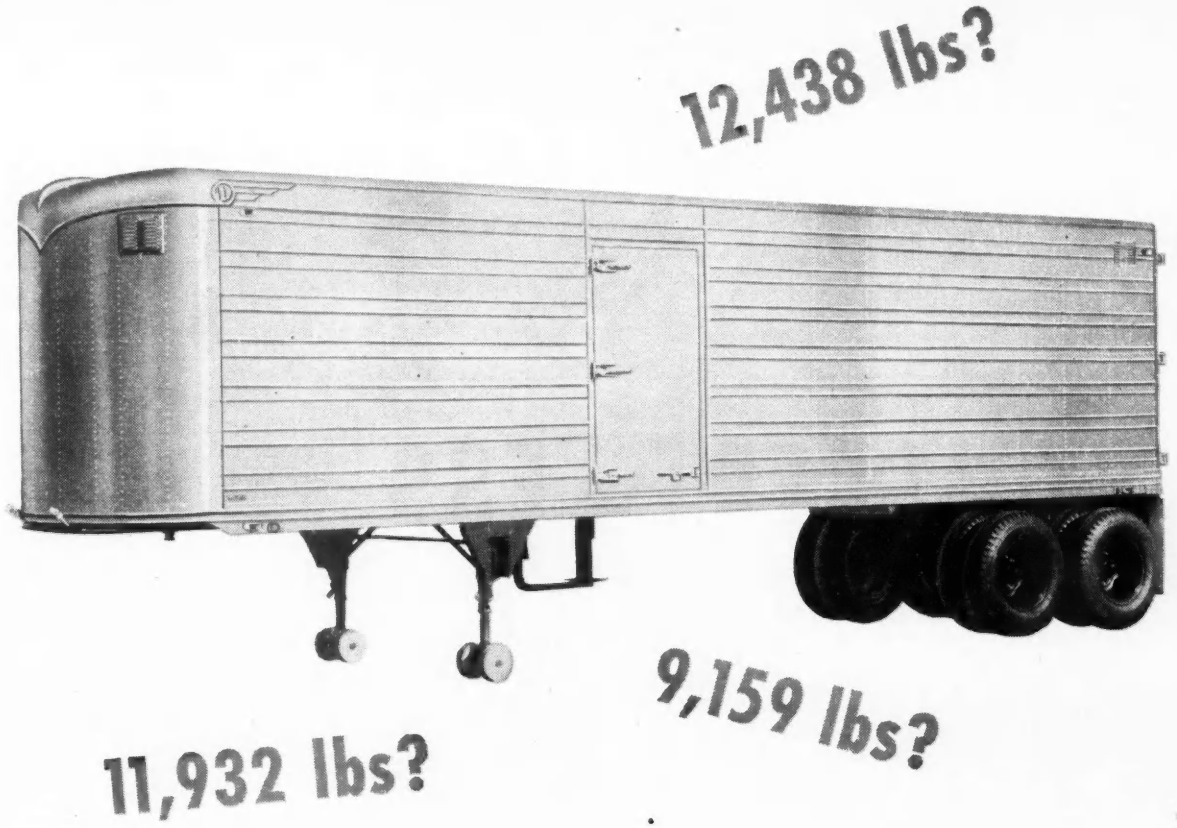
NO OTHER VELOCITY GOVERNOR CAN GIVE YOU ALL THESE ADVANTAGES

KING-SEELEY CORPORATION

ANN ARBOR MICHIGAN

PLANTS IN ANN ARBOR GRAND RAPIDS YPSILANTI

"Do you put in a new carbon when you take the old out?"



How much does this Utility Trailer weigh?

It's a big 35-foot dry freight unit made by Utility Trailer Manufacturing Company, Los Angeles—*oldest trailer manufacturer in the nation.*

Big as it is, it weighs only 9,159 pounds — because Kaiser Aluminum is used in its construction!

If made of steel it would have to carry at least 2,773 *extra* pounds — all profit-robbing dead weight. But use of Kaiser Aluminum gives a bonus of 2,773 pounds of *payload* to operators of Utility Trailers.

And here are other important bonuses: By specifying light, strong Kaiser Aluminum construction, operating and maintenance costs can be cut to the bone.

Painting is never necessary. Damaged equipment can be repaired at lower cost, with equipment standard in most shops. Sanitation problems are fewer when carrying perishables.

Discover the dollars and cents advantages of Kaiser Aluminum construction in *your* units! Phone the nearest sales office listed below and we'll gladly give you more information at no obligation!

Kaiser Aluminum is produced by Kaiser Aluminum & Chemical Corporation.

Kaiser Aluminum

SOLD BY KAISER ALUMINUM & CHEMICAL SALES, INC., KAISER BUILDING, OAKLAND 12, CALIF. . . . OFFICES IN:
Atlanta • Boston • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Houston • Indianapolis • Kansas City • Los Angeles
Milwaukee • Minneapolis • New York • Oakland • Philadelphia • Portland, Ore. • Rochester, N. Y. • Seattle • Spokane • St. Louis
Wichita • EXPORT OFFICE, OAKLAND, CALIFORNIA • WAREHOUSE DISTRIBUTORS IN PRINCIPAL CITIES

Diesel Starting

Continued from Page 120

ments in cetane number obtained by the use of presently known ignition accelerators.

3. Due to the fact that engines of current design likewise do not respond to increases in natural cetane number above the range of 55 to 60, it is not attractive to the refiner to invest in further research along the line of improving cetane number for cold starting purposes either by way of fuel treating, synthesis or additives.

4. It is felt that engine builders might contribute much by investigating the effect of injection characteristics and combustion chamber design on cold starting. If such work has already been done, publication of such information would assist many to reach a better overall understanding of the problem.

5. With present combinations of fuels and engines, the most effective and potentially the most convenient method of assisting diesel starting by means of a priming fluid. Of these fluids, diethyl ether is by far the most effective, cheapest and widely distributed. It is not believed that further search for a better fluid is warranted. It is felt, however, that due to possible hazards in the use of ether, the promotion of its use should originate with the engine builder, with each builder recommending the priming procedure for his particular engines.

Ether Injection Simplified Through Use of Capsules

Some time ago Standard Oil of California began packaging di-ethyl ether in capsules. The fluid is put up in a small plastic container and sealed, containers of different volume being available commercially. This removes the hazard of handling the fluid around an engine and also limits the amount of fluit fed into the engine.

Since then the engine builders have felt safer in recommending its use. More recently Standard Oil made its patented starting fluid available in gelatine capsules in two sizes—5 cc and 17 cc. They are used in conjunction with a simple piece of plumbing equipment having a special puncturing tool for opening the capsule; and a priming system for injecting the fluid. The fluid is said to flow at minus 70 F, not to corrode metal parts, and contains additives for cylinder lubrication. It is safer to handle and can be used with more assurance since the amount of fluid injected into the engine is carefully controlled.

Apparently, di-ethyl ether paves the way to simplifying starting at temperatures above zero where only a stimulant to ignition may be required. At lower temperatures where both cranking and firing require special aids, di-ethyl ether injection appears to simplify the situation by its ability to initiate ignition.

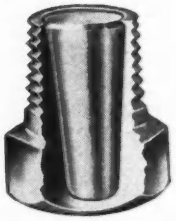
END

Please resume your reading on P. 73

WHY ACCEPT LESS *Than The Best?*

Light weight, ruggedly built valve operator is an hydraulic pump that opens Internal Hydraulic Safety Valves.

Internal Hydraulic Safety Valve, normally held closed by spring pressure. Can be opened only by hydraulic pressure.



Fusible Plug, melts at 165°, releases pressure, automatically closes any open valve in event of fire.

Only QUALITY equipment can assure utmost safety, deliver uninterrupted service and pare maintenance costs to the bone. That's why so many gasoline and petroleum transporters insist on Shand & Jurs Internal Hydraulic Safety Valves for all their truck tanks. They know that the high quality of materials and workmanship characteristic of S. & J. products insure long life and trouble-free operation. They also recognize S. & J.'s engineering acumen which prompted use of hydraulic power in the operation of their Internal Safety Valves. Yes, S. & J. Internal Hydraulic Safety Valves are designed to give petroleum transporters the maximum in **SAFETY.** Why accept less?

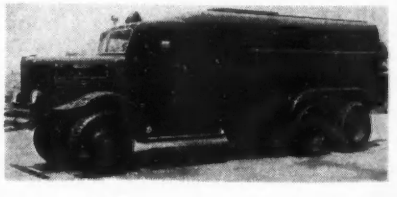
SHAND & JURS CO.

BERKELEY, CALIFORNIA

NEW YORK CHICAGO HOUSTON LOS ANGELES SEATTLE

SHAND & JURS

For Desert Operations



Special Oshkosh chassis with tandem rear axle and six-wheel drive carries Powers standard body, Series 600-C type, on this truck which is used by the U. S. Bureau of Reclamation in line construction at the Parker Dam in California. Unimproved mountain and desert roads offer big impedance for such heavy-duty work. All-steel body measures 199 in. long, 96 in. wide and 77 in. high with weather-tight compartments. The unit is equipped with an 18,000-lb power winch and pole derricks capable of handling 80-ft long poles

FEDERAL 6-WHEELERS WILL DO YOUR JOB BETTER!

Federal Tandem Units are available for your hauling job with gross vehicle ratings from 27,500 lbs. up to maximum load limits.

SPECIFY FEDERALS AND CUT TON-MILE COSTS

Where the going is tough . . . where unmatched load hauling ability, pulling capacity and economical operation really count . . . put Federal Six Wheelers on the job. Federal's balanced engineering design assures an abundance of economical power when needed without over-stressing load-carrying components. This reduces maintenance to a minimum—keeps trucks on the job longer. Add to these: the unusual strength and stamina built into Federal frames; heavy duty, long lasting brakes; easy steering; rugged, modern designed tandem axles and many other money saving Federal features and you can readily appreciate why Federal Six Wheelers mean bigger and more profitable payloads. See your Federal Dealer today.

Federals Have Won. . . . By Costing Less To Run

FEDERAL MOTOR TRUCK COMPANY, Detroit 9, Michigan

A BROAD SELECTION OF MONEY SAVING UNITS

49 Models

¾ to 35 Tons

Federal offers over 425 combinations, gasoline or Diesel powered, with gross ratings to over 90,000 lbs., including a full line of 6-wheelers.

Mail This Coupon Today For The Facts About Federal 6-Wheeler Trucks

Name .....

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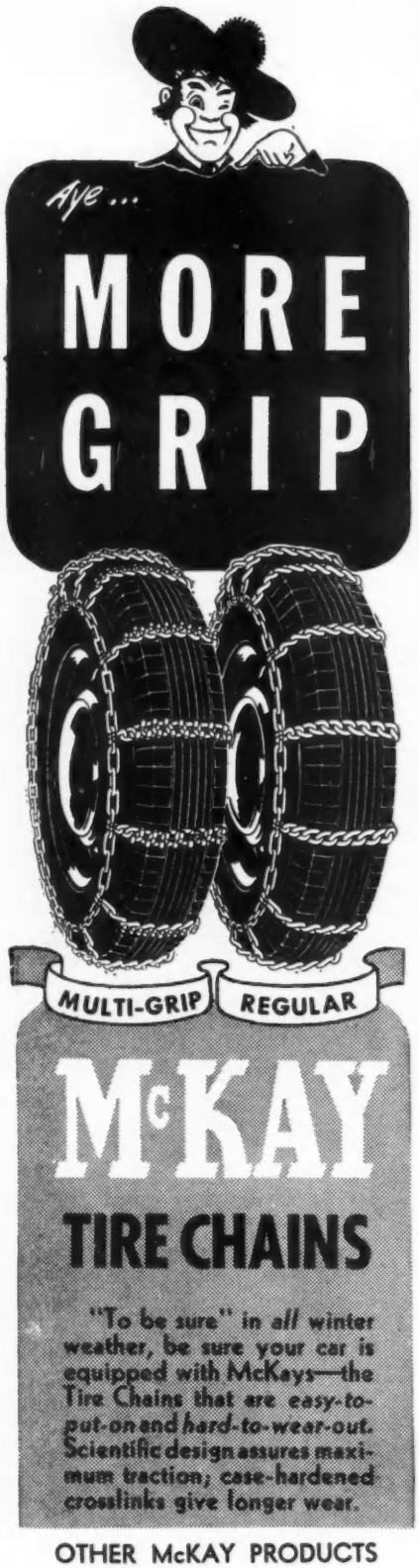
GASOLINE • DIESEL

FEDERAL TRUCKS

Since 1910


Aye...
MORE
GRIP
MULTI-GRIP
REGULAR
McKAY
TIRE CHAINS
"To be sure" in all winter weather, be sure your car is equipped with McKays—the Tire Chains that are easy-to-put-on and hard-to-wear-out. Scientific design assures maximum traction; case-hardened crosslinks give longer wear.

OTHER McKAY PRODUCTS

- McKay Cleaner-Wax
- McKay Car-Wash
- McKay Chrome-Cleaner
- McKay Metal-Fil

THE McKAY COMPANY

465 McKAY BUILDING

PITTSBURGH 22, PA.

Driver Cooperation

Continued from Page 78

tors contributing most to safe and efficient vehicle operation:

1. Physical and mental fitness
2. Skill
3. Knowledge
4. Judgment
5. Habit
6. Attitude

With these factors in mind, a complete educational program has been developed to help each driver to get the most out of his equipment. A booklet outlining operating procedures is furnished to all drivers to insure maintenance of standards including personal appearance and conduct. Each driver is expected to see that the original clean, high polished appearance of his truck is maintained at all times; that each truck is brushed or dusted off daily; that any damage is repaired immediately and that depreciation is never allowed to become apparent.

Careful Driver Selection

DRIVER selection is a responsibility of division management. Wherever possible, prospective drivers are chosen from employees in other departments who have expressed such a preference. Besides this source, applicants may be friends of the company or be recommended by persons familiar with General Petroleum. Some are hired as a result of general employment application.

The procedure for handling infractions of established rules is entirely flexible. Each case is considered individually with the disposition in the hands of division management in council with our own industrial relations section. The same is true in handling the case of a driver involved in an accident. The driver's record is reviewed, his physical condition and mental attitude are subjected to re-examination where indicated and the circumstances surrounding the infraction or accident are carefully studied. Decisions are thus arrived at on a fair, intelligent basis as opposed to hasty, often ill-advised judgment of a so-called "kangaroo court."

By way of summary it may be said that the company does everything possible to make our fleet operation the best of its kind anywhere. If we have succeeded in some measure it is largely the result of a cooperative attitude on the part of the personnel involved.

END

Please resume your reading on P. 81

Budd Wheel

distributors provide the same service illustrated on the opposite page

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Cruse-Crawford Wheel & Rim Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
FARGO—Wheel Service Company
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Wheel & Rim Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel, Inc.
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MINNEAPOLIS—Wheel Service Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees, Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel, Inc.
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees, Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Rim Co.
SPRINGFIELD, MO.—Barbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees, Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.

EXPORT

CLEVELAND—C. O. Brandes, Inc.

CANADA

CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—General Auto Equipment Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.

Toronto Trucker Doubles Tire Mileage.

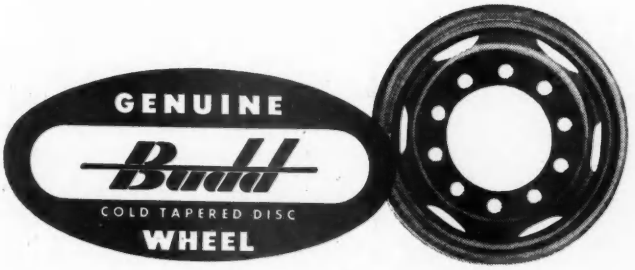
● Al Miller, salesman for the Wheel and Rim Co. of Canada, Ltd., writes: "Budd Wheels with wide base rims really racked up a score with a customer of ours! Mr. McAnally, owner of the McAnally Freight-Ways Company, Ltd., complained to me that wheel breakage had become a tremendous headache . . . unevenly worn tires were blowing-out right and left . . . his road service gang was being run ragged.

"Investigation disclosed a rim and tire combination that wasn't quite right. Upon my suggestion, an experimental changeover was made to Budd Wheels with wide base rims. So successful was the new combination, that all 85 tractor and trailer units have since been converted, and wide base rims are specified on all new equipment!

"Mr. McAnally tells me that wide base rims are so easy on sidewalls that blow-outs are few and far between. Budd Wheels run true...tire wear is now even...average mileage has increased from 40,000 to 96,000."

There is a list of Budd Wheel distributors on the opposite page. Call the one nearest you and find out how the correct Budd wide base wheels can increase your efficiency, save you money. Remember—Budd has *the* complete line.

The Budd Company, Detroit 14.



Look for this label (in blue, red and gold) on the rim of every genuine Budd Wheel.

IHC's New L-Line Has Valve-in-Head Engine

Continued from Page 77

full-automatic ignition selectors. The crankcase has an extended skirt for extra strength and rigidity. Other features include a crankcase ventilator, floating, screened oil-intake and full-pressure lubrication system.

Super Blue Diamond

The new Super Blue Diamond has a displacement of 269 cu in. and a horsepower of 100.5. Compression ratio is 6.3 to 1. Mechanical features include Stellite-faced valves; Durachrome heat-treated valve inserts; a more efficient crankcase ventilating system; an improved lubrication system; more economical oil consumption; and deep-well tappet fittings.

Super Red Diamond

The Super Red Diamond is available in three sizes. The 372 cu-in. develops 144 hp; the 406 cu-in., 154 hp; the 450 cu-in., 162 hp. Compression ratio of the Super Red Diamond is 6.3 to 1.

Improvements eliminate all restrictions on heat dissipation, so that these larger power plants maintain peak efficiency through severe, high speed operations. New features are an outside air intake on the carburetor; larger carburetors, intake ports and manifolds; slo-roto exhaust valves; a new fuel saving combustion chamber design; and thin replaceable piston sleeves.

Roomier Cab

The "Comfo-Vision" cab measures 58¼ in. wide by 51 5/16 in. high by 58 3/16 in. long inside. Head room measures 37¾ in. to 38¾ in., depending on the model; leg room, 44¼ in. to 45½ in.; elbow room, 8 in. to 9½ in. Seat adjustment is 4 in. Knee room, 17¾ in. to 19 in., depending on the model, has been effected through the roomier cab and a reduction in the steering column angle. The curved contour instrument panel further adds to cab-room and occupant-comfort.

Full width seats are built as a unit, so that the proper angle between back and seat is maintained at any position of seat adjustment. Optional seats are available, with foam rubber or deep coil spring construction, either full or driver seat width.

All-around visibility and increased cab roominess are features of the "Comfo-Vision" cabs. A total of 12.6 sq ft of safety glass area is provided

An all-weather cowl ventilator works in conjunction with ventilating windows to insure proper fresh air circulation. A fresh air heating-defrosting-ventilating system, designed to operate with cowl open so that fresh air is drawn in, is available as optional equipment.

Instruments are arranged in two easily-reached clusters. The push-button, magnetic-switch type starter is at the driver's fingertips on the panel. A special panel is arranged for simplified radio installation. Drivers' arm rests are standard equipment on the larger models; right and left side arm rests are available on all models.

Plasticized upholstery is long wear-

(TURN TO PAGE 128, PLEASE)

Put Your Money on the

Thermoid Line

Built for Heavy Duty Service

Thermoid Brake Blocks are made to give you reliable performance under ALL operating conditions, hot or cold, wet or dry—they are not a compromising adaptation. They last longer and reduce "downtime" maintenance costs.

For heavy duty applications requiring up to ½-inch thick braking materials, Thermoid CBB Sets are dual-friction, specially molded.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

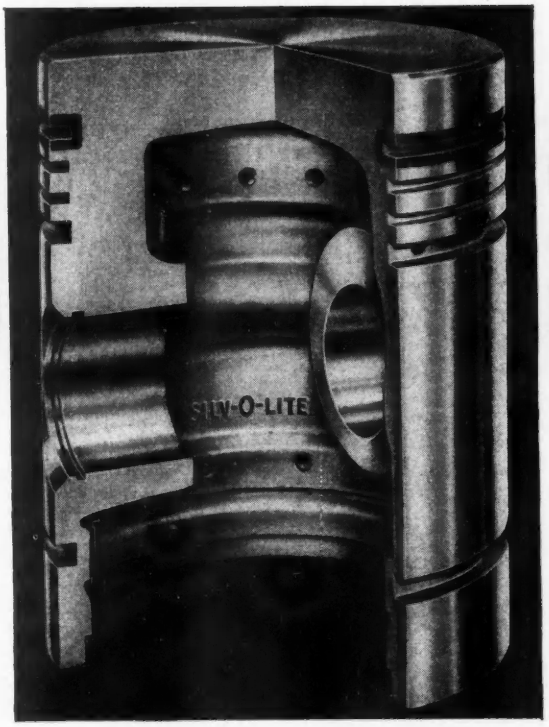
Thermoid Company, Trenton, New Jersey

DUALOY*

THE BI-METALLIC MOLECULAR BONDED PISTON

Built for HEAVY DUTY

Cutaway section of DUALOY* Piston showing bi-metallic molecular bonded top ring groove.



TYPICAL failure of top ring groove in piston of conventional construction.

REDUCE OPERATING COSTS

DUALOY* pistons are reducing operating costs by eliminating the costly overhauls and lay-up time that are due to top ring groove failures in conventional heavy duty pistons.

• • • •

Performance records of DUALOY* pistons in heavy duty operation prove that they resist wear and pounding in the top ring groove area to a degree never before obtained in aluminum alloy pistons.

• • • •

SILV-O-LITE has the most complete line of passenger car and heavy duty pistons available. The heavy duty types are available with or without DUALOY* according to your requirements for top ring land iron clad protection.

*Trade Mark Registered.
The manufacturers of Silv-o-lite have been licensed by Fairchild Engine & Airplane Corporation to use the Al-Fin process in the manufacture of bi-metallic molecular bonded pistons.

Better Pistons Since 1922

UNITED ENGINE AND MACHINE COMPANY

310 PREDA STREET · SAN LEANDRO, CALIFORNIA

IHC's L-Line

Continued from Page 126

ing, resists absorption of stains and wipes clean with a damp cloth.

A large, one-piece "Sweepsight" windshield, curved to minimize eyestrain and reduce glare, gives unobstructed full front vision. Corner posts have been moved back to reduce any blind spot, while a shorter front-axle-to-cab dimension gives a closer view of the road. Large door windows and twin rear windows to provide a total of 12.6 sq ft of safety glass area for safer, easier driving. Dual windshield wipers, vacuum-operated on some models, electrically-operated on others, are standard equipment.

Chassis Dimensions

The dimensions of the chassis of the new L-line have been engineered to provide better load distribution, greater maneuverability, shorter over-all lengths and improved engine accessibility.

Wheelbases have been shortened as much as 7 in. in some models. The shorter wheelbases, together with reproportioned cab-to-rear axle dimensions and front-axle-to-cab dimensions, have resulted in a shifting of load weight, so that it is in balance between front and rear axles.

Better maneuverability results from the shorter turning radius of the shorter wheelbases, as well as from the widened axle treads. The turning angle on practically all models throughout the line has been increased to a minimum of 37 deg, for both popular and standard tire sizes.

Power Train

Main transmissions available include two sizes of 3-speed Synchro-shift; a 4-speed sliding gear; a new 4-speed Synchro-shift; four sizes of heavy-duty, 5-speed constant-mesh, with direct or overdrive in fifth; and 5-speed Synchro-shift, with direct or overdrive in fifth. A number of auxiliary transmissions also are available.

Wider, sturdier rear axles are used. Hypoid single-speed, double reduction and two-speed with electric shift are included in the line. Hypoid axles, introduced in the L-line, provide longer life, greater torque transmitting capacity and quieter final-drive operation.

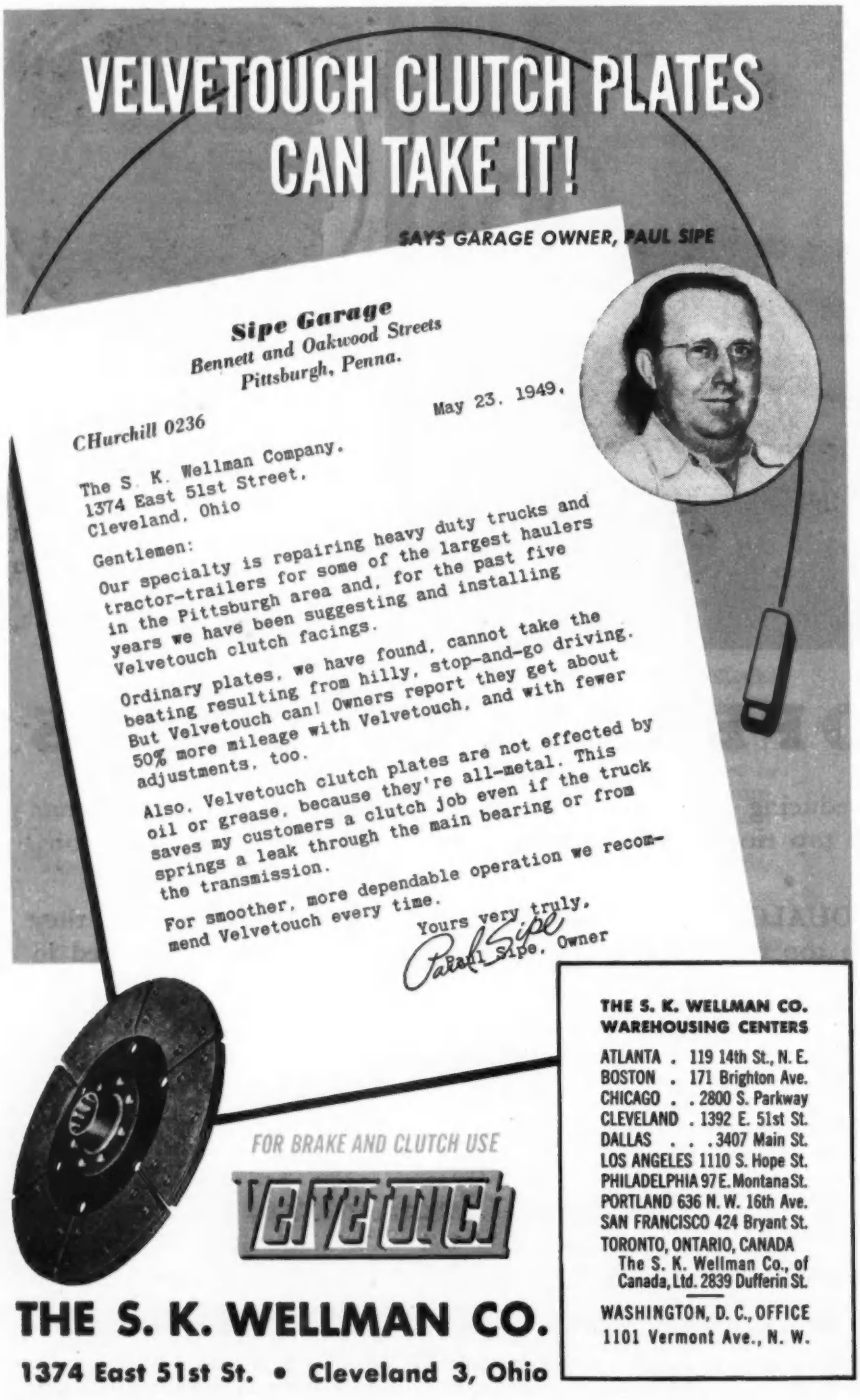
In the Steel-flex frame construction strength has been combined with flexibility to provide a frame that stands up better under heavy loads and rough roads.

Sturdy crossmembers—five in light trucks, six in mediums and seven in heavies—are cold-riveted to pressed steel channel side rails. A heavy channel-type bumper, forming an extra frame crossmember, is mounted directly to the frame.

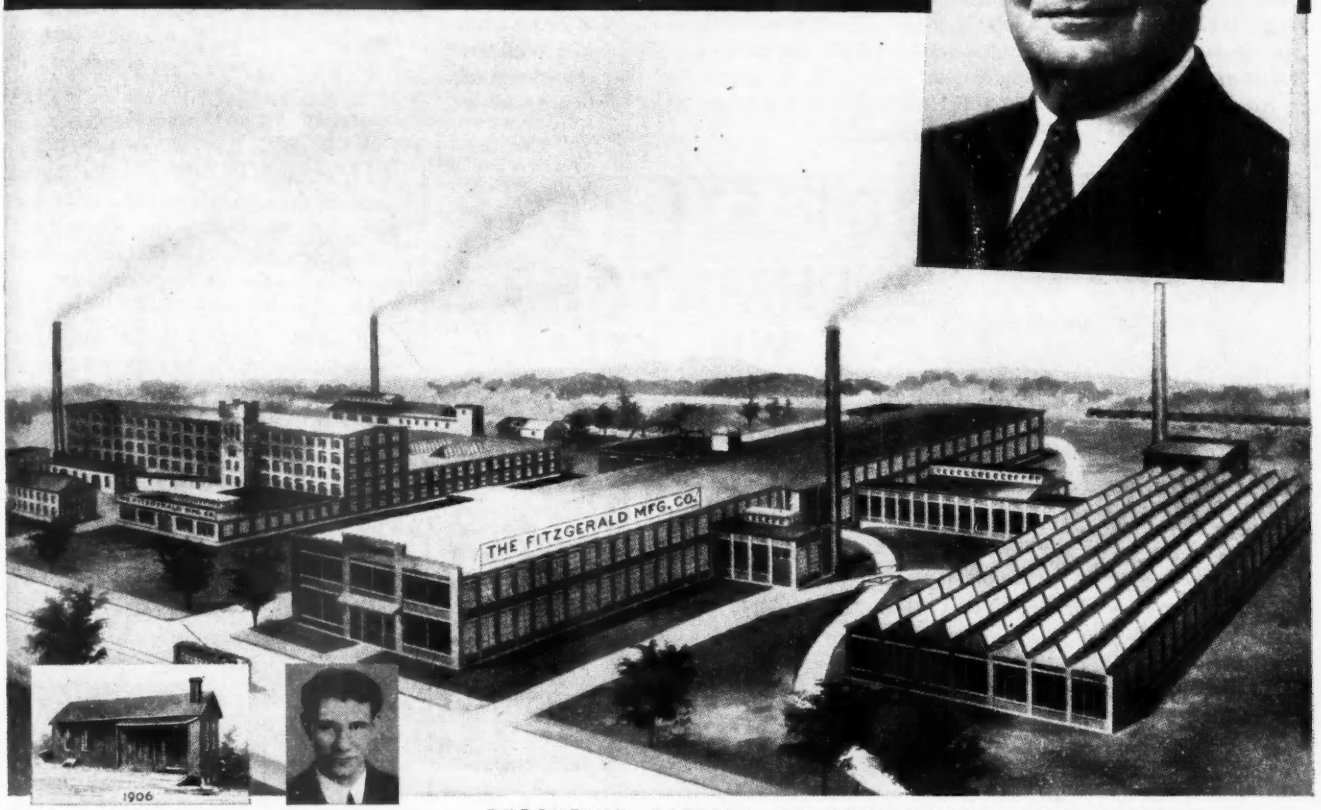
Semi-elliptic rear springs are shackled at the rear with brackets cold-riveted to the frame. A wide variety of springs is available to provide the correct springing for any job.

END

Please resume your reading on P. 78

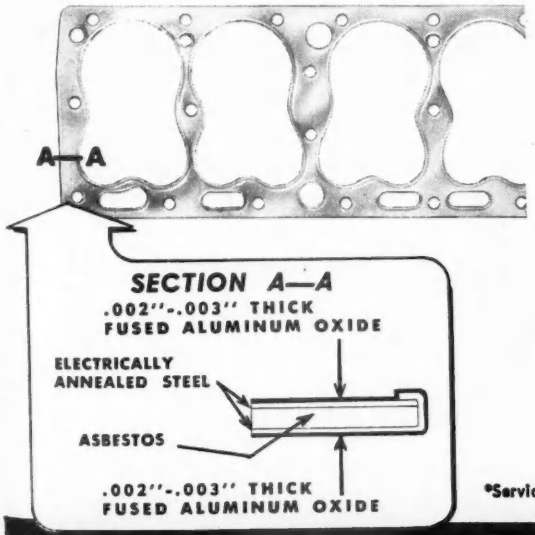

VELVETOUCH CLUTCH PLATES CAN TAKE IT!
SAYS GARAGE OWNER, PAUL SIPE
Sipe Garage
Bennett and Oakwood Streets
Pittsburgh, Penna.
CHurchill 0236
May 23. 1949.
The S. K. Wellman Company.
1374 East 51st Street.
Cleveland, Ohio
Gentlemen:
Our specialty is repairing heavy duty trucks and tractor-trailers for some of the largest haulers in the Pittsburgh area and, for the past five years we have been suggesting and installing Velvetouch clutch facings.
Ordinary plates, we have found, cannot take the beating resulting from hilly, stop-and-go driving. But Velvetouch can! Owners report they get about 50% more mileage with Velvetouch, and with fewer adjustments, too.
Also, Velvetouch clutch plates are not effected by oil or grease, because they're all-metal. This saves my customers a clutch job even if the truck springs a leak through the main bearing or from the transmission.
For smoother, more dependable operation we recommend Velvetouch every time.
Yours very truly,
Paul Sipe, Owner
FOR BRAKE AND CLUTCH USE
Velvetouch
THE S. K. WELLMAN CO.
1374 East 51st St. • Cleveland 3, Ohio
THE S. K. WELLMAN CO.
WAREHOUSING CENTERS
ATLANTA . 119 14th St., N. E.
BOSTON . 171 Brighton Ave.
CHICAGO . . 2800 S. Parkway
CLEVELAND . 1392 E. 51st St.
DALLAS . . . 3407 Main St.
LOS ANGELES 1110 S. Hope St.
PHILADELPHIA 97 E. Montana St.
PORTLAND 636 N. W. 16th Ave.
SAN FRANCISCO 424 Bryant St.
TORONTO, ONTARIO, CANADA
The S. K. Wellman Co., of Canada, Ltd. 2839 Dufferin St.
WASHINGTON, D. C., OFFICE
1101 Vermont Ave., N. W.

"It telescopes to fit the load—all we need now is I.C.C. approval"



Original Plant—1906 P. J. FITZGERALD
Floor Space about 250 sq. ft. Founder—1906

EXECUTIVE OFFICES AT TORRINGTON AND PRESENT FACTORIES AT TORRINGTON AND WINSTED, CONN., U.S.A.



For a lasting, perfect seal in today's new high compression engines, it pays to depend on Fitzgerald Metallic Aluminum-Fused-Oxide Steel Asbestos Gaskets*.

Under the new demands of the most modern engines, they are providing the same rugged, dependable performance that has won Fitzgerald Gaskets world-wide acceptance . . . from our first, made in a one-room shop in 1906, to the complete line being built in our modern plants today, exported by the world's largest automobile manufacturer to all foreign countries except Canada, where we employ our own sales force.

Combining the strength of specially tempered steel, aluminum's resistance to rust and corrosion, and a top-grade asbestos filler, these newest Fitzgerald Gaskets withstand high pressures and heat that cause other gaskets to fail.

THE FITZGERALD MANUFACTURING COMPANY
Torrington, Connecticut

*Service Mark Registration Pending.

FITZGERALD *Gaskets*
SINCE 1906

Safety Lane Saves $30,000 Per Year

Continued from Page 65

two on the tractor and two on the trailer. The tractor men divide the work; one man checks oil and filters, changes oil if needed and greases. The other man checks safety equipment, starting with lights, then flares, fuses, flags, jacks, windshield wipers. Lastly, wheels are jacked up and brakes tested for drag and bearings for looseness.

Any repair or replacement which requires more than 30 minutes, demands that the unit be taken from the Safety Lane to the main shop.

On the trailer, one man greases, the other checks lights, brakes and connections.

While the above check is being made, the tire man checks pressure in all tires with a gage. He then checks duals with a matcher. Any bald carcasses are removed for recapping or to be discarded, and new tires installed. The tire man fills in a tire report on each unit serviced.

Time on units through the lane runs 15 to 30 minutes.

Lane Saves $30,000 Per Year

BEFORE we put in the Safety Service Lane, we averaged one road service call per day for our service truck out of the Omaha shop. It has now been 60 days since we have had a service call, and we do not average one call per month.

We estimate that we are saving $10,000 per year on tire cost having all tires checked and matched at the lane each time the unit is in. We estimate that we are saving $20,000 on mechanical cost (that is replacements and minor shop repair).

Of course, the tires we are buying today are higher quality than those we were getting three years ago. However, taking all tires, our average tire mileage three years ago was 42,600 miles before recapping. For 1948, we averaged better than 60,000 miles—same type of equipment and same type of operation. We know that some part of this gain is sure due to our regular inspection and service at the Safety Service Lane.

While one man greases the chassis, another is matching rear dual tire set

Before we put in the lane, tractors out of our Omaha terminal averaged 60,000 miles before being brought to the shop for a general overhaul, a motor or engine replacement—or what we term our major overhaul. Today our units are running 80,000 to 100,000 miles between trips to the shop for a general overhaul. It is conservative to say that the Safety Service Lane has extended the time between shop lay-ups for general overhaul by at least 30 per cent.

(TURN TO PAGE 132, PLEASE)

FOR OUTDOOR STORAGE

- LOW COST
- SIMPLE INSTALLATION
- RUGGED CONSTRUCTION
- SAFE—NO FIRE HAZARD
- KEEPS UP BATTERY
- NATURAL HEATING
- NO ELECTRIC PLUG-INS

TEMSTART WILL KEEP ENGINES WARM IN COLD WEATHER *Automatically*

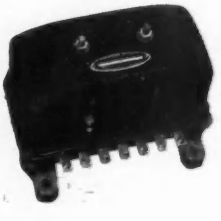
TEMSTART will AUTOMATICALLY keep the ENGINE WARM in its NATURAL way by periodically starting and running it at a speed sufficient to circulate the water, build up oil pressure, and charge the battery. When the water temperature reaches a pre-set "HIGH"—the control will STOP the engine until the temperature reaches a pre-set "LOW."

These cycles of warm-up running will vary with the weather temperature and the protection the engine has but will not run many minutes per hour under normal conditions.

DOUBLE PROTECTION is provided if the engine should fail to start. A circuit is provided in the control for an audible or visual alarm, and a secondary alarm temperature switch to give an alarm before the water can freeze.

This LOW COST economical unit is easily installed by any mechanic or electrician on most types of vehicles in less than half a day. No water connections to make — simple wiring hookup — does not affect the normal operation in any way — perfectly safe — no fire hazard.

TEMSTART was developed during the war to keep power plants from freezing and ready for instant use in cold climates and had to operate dependably under conditions of 68° below zero. After proven results from two years of testing in the field on buses and trucks, TEMSTART is now available. ORDER NOW to protect your fleet for Winter.



Write or Wire for Complete Information

SYNCHRO-START PRODUCTS, INC.
MFRS. OF
Automatic Engine Control Equipment
SINCE 1932
1046 WEST FULLERTON AVENUE CHICAGO 14, ILL.

SAVE MONEY
on Truck Fleet Maintenance-Cleaning

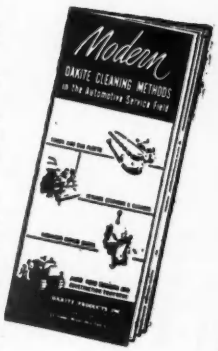
YOU naturally take pride in the appearance of your trucks because they're "rolling advertisements" for your business. And an easy, low-cost way to keep truck exteriors gleaming, interiors clean and odor-free, is with *built-for-the-job* Oakite automotive cleaning methods and materials.

There is Oakite Composition No. 70, for example. This fast-acting cleaner brings out the lustre of exterior finishes as it thoroughly rinses away all road film, dirt and grease . . . yet it does not harm paint, decals or top varnish. And best of all, carrier bodies washed with Oakite Composition No. 70 dry down streak-free—*without chamoising.* For truck interiors, Oakite offers triple-action "Tri-Sanite", a scientifically designed material which cleans, deodorizes and disinfects—*all in one simple, low-cost operation.*

Oakite Composition No. 70 and Oakite Tri-Sanite are but two members of a large family of *specialized* Oakite materials and methods which were developed to help slash time and costs in all phases of automotive cleaning. Complete details on Modern Oakite Cleaning in the Automotive Service Field are contained in a 36-page, specially prepared

FREE Booklet

which not only gives the full story on Oakite interior and exterior cleaning of carriers, but also describes in detail Oakite methods for fast, safe paint-stripping . . . derusting . . . steam and manual cleaning of motors, blocks and chassis . . . desludging, clearing of clogged radiators . . . descaling . . . cleaning of parts before repair . . . and dozens of other maintenance jobs. Every fleet superintendent, service manager and shop foreman should have a copy at hand. Send TODAY for yours. Oakite Products, Inc., 26D Thames St., New York 6, N. Y.



Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE 1909 1949 40th ANNIVERSARY YEAR

OAKITE

REG. U. S. PAT. OFF.

SPECIALIZED INDUSTRIAL CLEANING

MATERIALS • METHODS • SERVICE

There is no substitute for CHAINS AND SAFETY

Campbell, *specially designed,* heavy duty chains assure you maximum protection! *You can't afford to risk lives and equipment on icy or slippery roads.*

You play safe when you use Campbell Lug-Reinforced Chains—they give maximum starting and stopping traction *and more miles per dollar!*

It Doesn't Pay to Take Chances . . .
Specify Campbell Lug-Reinforced Chains

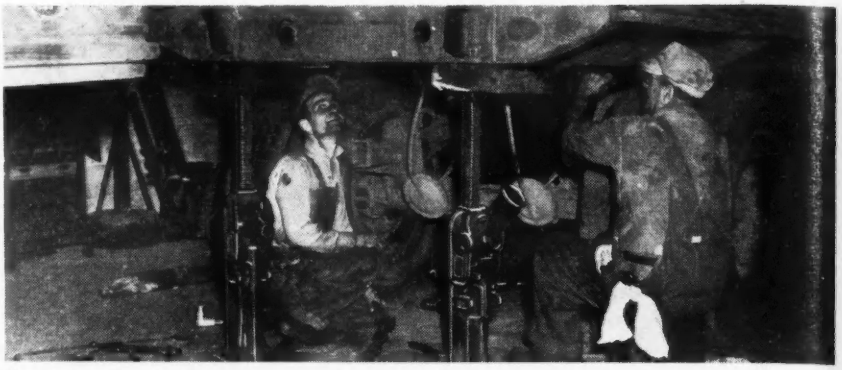
CAMPBELL CHAIN *Company*
(International Chain & Mfg. Co.)
York, Pa.

Safety Lane

Continued from Page 130

Trailers Also Repaired in Lane

IT SHOULD be explained that the three trailer mechanics also handle general trailer repair in the lane. For example, if a trailer needs springs replaced, it is moved to the trailer area in the lane and work is handled there when the trailer mechanics are not working on the regular check on in-and-out trailers.



The Safety Service Lane has a trailer area where general trailer repairs are handled

If a unit requires body repair, it is taken to our body shop. As explained, if a unit's check shows that a repair will require more than 30 minutes, the mechanic who is foreman at the lane, 'phones our general shop, where we have 10 full time mechanics, and reports that the unit is being sent over, and for what repair. In this way, the general shop foreman can make the arrangements for the work to be done. When the unit arrives, he is ready to start on it immediately.

Our Safety Service Lane operation is not a set procedure. We are changing and improving it all the time. We have had sufficient experience to know, however, that we are on the right track.

END

Please resume your reading on P. 66

SOMETHING *NEW* HAS BEEN ADDED

AND IT MEANS ADDED PROFITS ON EVERY

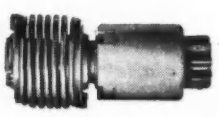
SAVE THIS TAG FOR THE BENDIX DRIVE
$.50
W. B. D. EXCHANGE ALLOWANCE CREDIT
The retail purchaser of this new genuine Bendix Drive is entitled to a credit allowance of $1.00, which applies to the purchase price of the complete unit, in exchange for the worn Bendix Drive (WBD). All other classes of trade receive a merchandise credit allowance. No merchandise credit allowed unless this tag is returned with the worn Bendix Drive to our central distributor.
PLEASE DO NOT EXPECT TO RECEIVE YOUR CREDIT WITHOUT THIS TAG.
Eclipse Machine Div.
Elmira, N. Y.
Bendix
AVIATION CORPORATION
Form EM-226NF

Bendix Drive

Now a new refund tag goes with every Bendix* Starter Drive. You get a double profit from the finest and most reliable starter drive in the industry: a profit from customer sales, and a profit from its return to the Bendix Drive Central Distributor. It's a double profit on every sale when you sell Bendix, the nation's No. 1 starter drive.

*REG. U. S. PAT. OFF.

INSTALL THIS DRIVE →



RETURN THE OLD ONE WITH THIS TAG →

THEY'RE WORTH MONEY! TO YOU

ECLIPSE MACHINE DIVISION of Bendix AVIATION CORPORATION
ELMIRA, NEW YORK

Cummins Adds Two 175 H. P. Diesels

TWO NEW six-cylinder, highspeed diesel engine models designed for on and off-highway applications have been placed in production by the Cummins Engine Co., Inc., Columbus, Ind. Both the HRBB-600 (highway) and HRBBI-600 (off-highway) models have a maximum rating of 175 hp at 2000 rpm.

Features of the two new engines are: fully counterbalanced crankshaft; camshaft of new design; viscous-type torsional vibration damper; revised fuel pump.

Both the HRBB-600 and HRBBI-600 Cummins diesels have a piston displacement of 743 cu. in., a 5⅛ in. bore, and 6-in. stroke. These two models are supplied with the following standard equipment: air cleaner, oil-bath type (unmounted); electrical equipment—12/24-volt, 700-watt; flywheel housing, SAE No. 2 with SAE No. 3 arms; Cummins fuel pump; fuel oil filter; fuel oil pressure gage (unmounted); governor; lubricating oil pressure gage (unmounted); lubricating oil strainer, full-flow type; thermostats, with main and by-pass flow control.

Additional standard equipment includes a two-cylinder, 7¼ cu ft. air compressor and a flywheel for 13-in. two-plate Lipe clutch on the HRBB-600, and idling control and flywheel for multiple disc clutch on the Model HRBBI-600.

"I'm stalled on the 9 Mile Road"

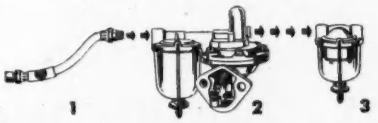
THE AC FUEL PUMP SYSTEM HELPS KEEP YOU OUT OF TROUBLE

It means delay and expense when your driver 'phones that the fuel system failed out in the country.

Two simple precautions will avoid such costly failures: 1—Be sure the fuel pump is an AC, heart of the fuel system on over 35,000,000 motor vehicles. 2—Inspect the AC Fuel Pump, at regular intervals, for pressure and flow . . . and do as many operators do, replace all pumps at specified mileages.

Complete 3-way protection can be assured by using the other two units of the AC Fuel Pump System . . . the AC Gasoline Strainer and the AC Flexible Gasoline Line.

AC FUEL PUMP SYSTEM



1. Leaky fuel lines are not only dangerous, but cause faulty operation of the fuel pump. Install a new AC Flexible Gasoline Line when you replace your fuel pump. 2. AC Fuel Pump, Heart of the Fuel System. 3. AC Gasoline Strainer keeps dirt and water out of carburetor, promotes easy starting and protects delicate carburetor parts. Your fuel system needs one.

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

Kester Flux-Core Solder ...The Mechanic's SILENT PARTNER

Good mechanics know that Kester Acid-Core Solder will do those numerous repair jobs faster and better. Kester Solder, in 1, 5 and 20-lb. spools, is the most important item in your shop. Insist upon KESTER ACID-CORE SOLDER from your jobber . . . the mechanic's standard for over half a century.

METAL MENDER AND RADIO SOLDER AVAILABLE IN HANDY "TOOL KIT" PACKAGE

A convenient size for those "away from the shop" jobs, or as a quick turn-over resale item that sells on sight (25c in most areas). Packed ten boxes to a display carton.

KESTER SOLDER COMPANY

4201 Wrightwood Avenue Chicago 39, Illinois

Factories also at Newark, New Jersey • Brantford, Canada

1899 50th Anniversary 1949

KESTER SOLDER

Washington Runaround

Continued from Page 42

ways, airways, etc., should be recouped by charging the users.

4. Railroad facilities should be consolidated. The government should formulate a national plan to compel the necessary physical and corporate reorganization. Government ownership will result unless these steps are taken.

Saga of the Motor Truck

In 1948, trucks moved six times the tonnage of crude oil and petroleum products and three times the percentage of total movements handled in 1948. Railroad movement over the same period declined from 16 per cent of the total in 1938 to less than 10 per cent last year, but tonnage handled increased slightly. Total transportation, including pipe lines and water carriers, almost doubled between 1938 and 1948, and last year exceeded the peak year of 1945 by 24.2 per cent, according to the Dept. of Interior. . . . Recent additions to new equipment of the Army include a full-tracked, completely armored personnel carrier; cross-country trucks, and a vehicular-launched assault-type bridge. . . . The Christmas mail rush will again see almost 4000 military vehicles in temporary use by the Post Office Department. Drawn from Army, Navy and Air Force, vehicles in each of 13 different areas will be under the supervision of a military transportation officer. Distribution of the vehicles began on Dec. 1 and they will be returned by Jan. 20, 1950. . . . Tire shipment statistics show that while original equipment demand for truck sizes is low and shows no signs of improvement, the demand for passenger car sizes reached an all-time peak level during mid-1949.

ICC Late Flash

On Nov. 22 the Interstate Commerce Commission made public its final decision on the now famous Lenoir and Schenley cases. This time the Commission as a whole reaffirmed the previous contention of its own Division 5, as outlined in the Woitishek case, contending that the "primary business" of these manufacturers (Lenoir Chair Co. and Schenley Distillers Corp.) is manufacturing and that their transportation activities, even though conducted at a profit, are in bona fide furtherance of the primary business. The decision is held as a victory for private carrier interests, but the Commission made clear the fact that each such case must be determined on its own merits.

END

Please resume your reading on P. 48

Schedules kayoed by breakdowns?

UNFORTUNATELY you can't eliminate lay-up time completely—for trucks, buses and taxis, like people, need certain adjustments and repairs once in a while. But you can keep equipment lay-up time at a minimum if you keep *wear* at a minimum. And that's what Quaker State HD Oil helps you do.

Quaker State HD is made from the world's finest crude oil—100% pure Pennsylvania grade crude oil—and it's specially refined for heavy duty use. It protects moving parts against heat and friction under toughest conditions. It helps prevent the formation of sludge, gum or varnish—actually *cleans* as it lubricates.

Use Quaker State HD Oil—to keep your equipment rolling better, farther, longer.

QUAKER STATE HD OIL
AND SUPERFINE LUBRICANTS

Use Quaker State HD Oil for trucks, buses, taxis, tractors.
Use Quaker State Motor Oil for passenger cars.

QUAKER STATE OIL REFINING CORPORATION, OIL CITY, PA.

Detroit Dispatch

Continued from Page 38

New Carburetor for Chevrolet

Chevrolet will use the new type model B Rochester carburetor as standard equipment on all cars and trucks next year. About 10,000 of the units were used on the tail end of the 1949 model run and are being put on all cars built after the first of December. The Rochester carburetor was first used on the Oldsmobile Rocket engine when it was introduced more than a year ago. It is of simplified design having only four parts requiring service, compared to seven on the previous carburetor used.

K-F Light Car Debut

Reports that the new smaller car to be built by Kaiser-Frazer next year will be ready for announcement by early spring are "too optimistic," according to a reliable company source. The best guess is that it will appear sometime next summer. Plans for the car leaked out of a secret meeting for dealers at Detroit. The car is not a $1,000 automobile, but will be designed to compete in the Ford-Chevrolet-Plymouth price class. It will be a standard size, five passenger car, offering exceptional gasoline economy, according to Henry J. Kaiser, board chairman. The company is staging a national contest to name the car, with $200,000 in prizes.

Truck Sales Near Million

Nineteen forty-nine will go down in the record books as another million plus truck production year. That mark was assured by the middle of November, when production went over 1 million units in U. S. plants alone. New truck sales, as reflected by registration figures supplied by R. L. Polk & Co., are not expected to hit quite a million this year, but will come close. Latest figures available show that through September new truck registrations were 717,000 or about 82,000 behind the same time last year. Despite the strong showing of truck sales in the past three months, it is not believed that the 283,000 new registrations needed to reach the million mark this year will be accomplished. It now looks as though the final result this year will show sales in the neighborhood of 950,000.

Transportation Dog Fights

Although manufacturers of trucks have not entered actively into the propaganda fight currently being waged against the trucking industry, they definitely are concerned about it. As a matter of fact, the industry has actively supported the ATA advertising fund for promoting truckers' interests by contributing substantially. Two principal phases of the controversy are of considerable concern to the manufacturers. First is the effort to drive a wedge between passenger car owners and truck operators which, if successful, would present a serious sales and legislative problem particularly for those that sell both cars and trucks. A second point is the fear that an all-out battle between the railroads and highway users may eventually lead to nationalization of railroads and subsequently of the trucking industry. The threat is not a serious one at the moment, but observers point out that the same type of conflict in England led to nationalization of the British railroads and later government involvement in the trucking industry. The manufacturers feel that mutual discussions of problems between the two industries will work to a better solution than to get into a public dog fight.

END

Please resume your reading on P. 42

THE
BIEDERMAN
TRUCK

An All-Star Truck
Constructed of All-Star Units
Doing an All-Star Job Since 1920

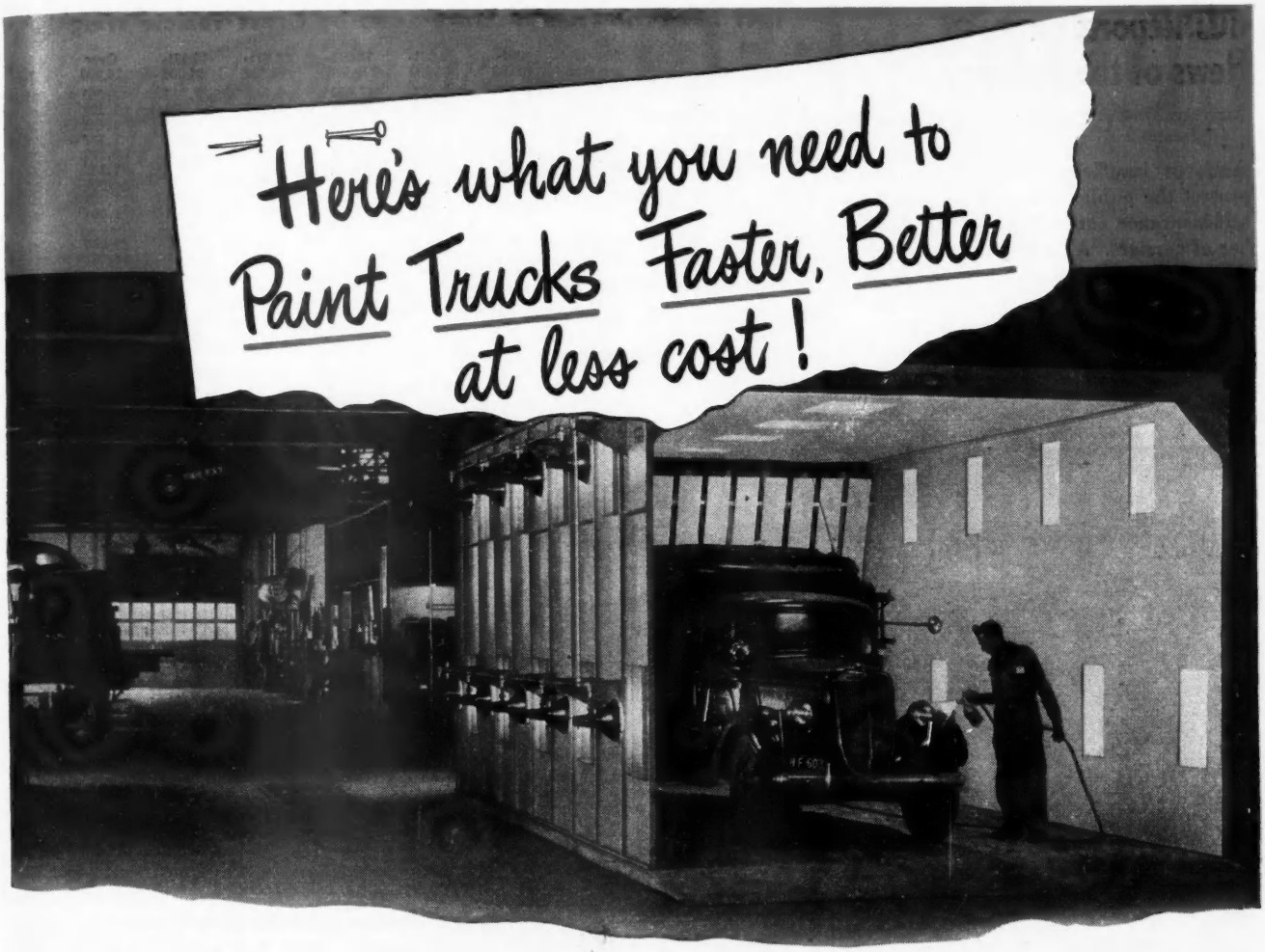
DEALERS: Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself.

Only the most sturdily constructed units of America's leading manufacturers are built into it.

Biederman Trucks win by performance. Inquiries regarding dealership solicited.

WRITE, WIRE or PHONE

BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO



DeVilbiss Complete Paint Shops
SAVE TIME, LABOR, MONEY

● With a DeVilbiss Complete Paint Shop in your service garage there's no hold-ups—no delays. Here in a single package is all the equipment you need to keep trucks looking their very best—to get them out on the road with less loss in travel time and revenue.

The DeVilbiss Spray Booth quickly and safely disposes of spray vapors and provides ideal working conditions to facilitate all painting operations. Scientific lighting helps operators work faster with less effort. Spray guns—identical with those used by truck manufacturers—let operators apply paint as fast as it is practical to work. And an air compressor with ample volume keeps guns and pneumatic tools working at full capacity. Your DeVilbiss distributor will point out many other features of this shop that will save you time and money.

THE DEVILBISS COMPANY • Toledo 1, Ohio
Canadian Plant: WINDSOR, ONTARIO

DE VILBISS

means **Quality** *in all four...*

SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

CCJ Reports on News of the Industry

Continued from Page 33

funds or insufficient staff to properly protect the public interest if it granted self-insurance authority to a large number of carriers. ATA spokesman hinted that many qualified carriers could be granted such authority if authorization were contingent upon periodical reports and checks to guard against undue accumulation of small claims.

1949 Domestic Truck Factory Sales by Gross Vehicle Weights*

	5000 lb. and less	5001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	31,918	25,697	8,171	17,451	4,047	2,708	1,290	91,282
February	32,799	25,543	8,155	16,057	2,855	1,839	1,292	88,540
March	39,769	28,082	8,790	17,838	2,364	1,654	1,428	99,923
April	40,568	25,068	7,440	13,909	1,926	1,590	1,307	91,808
May	33,805	19,931	4,779	12,159	2,294	1,327	1,223	75,518
June	43,655	23,572	5,242	12,031	2,110	1,417	1,147	89,174
July	41,166	24,358	6,000	9,857	1,729	1,411	906	85,427
August	47,312	23,101	5,924	8,874	1,941	1,654	1,183	89,999
September	46,349	19,073	4,801	7,403	2,074	1,523	1,264	82,487
Nine Months, 1949	357,341	214,425	59,302	115,579	21,340	15,123	11,040	794,180
Nine Months, 1948	331,294	174,610	119,122	167,668	49,621	34,119	15,162	891,596

*—Data from Automobile Manufacturers Association.

September Truckloading Up . . .

The volume of freight transported by motor carriers in September increased 2.1 per cent over August and 8.4 per cent over September, 1948, according to statistics compiled by the Department of Research, American Trucking Associations, Inc.

Comparable reports received by ATA from 336 carriers in 42 states showed these carriers transported an aggregate of 3,864,112 tons in September, as against 3,785,237 tons in August and 3,564,999 tons in September, 1948.

Truck Registrations at New High

New truck registrations were greater for September than for September, 1948, and were the highest for the past 12 months. A total of 89,253 new trucks was registered for September, 1949, as compared with 85,108 units in September, 1948. The total showed an increase of nearly 4,000 over the August, 1949, new truck registrations and was the highest month since August, 1948, when 91,923 new trucks were titled, according to R. L. Polk & Co.

But Not Plunging . . .

Figures for 1948 compiled by the ATA Research Department show a reduction in the relative cost of cargo loss and damage, as compared with motor carrier gross revenues, to the lowest point since 1942.

The compilation embraces 850 Class I common carriers of general freight whose 1948 gross revenues equalled $1,008,580,631. They paid out a total of $22,097,133 in the form of cargo insurance premiums plus uninsured freight claims paid out of their own pockets. Thus, their ratio of cargo loss and damage expenses to gross revenues was 2.19 per cent.

The 1948 ratio of 2.19 was the lowest since 1942. Comparable ratios in the last eight years follow:

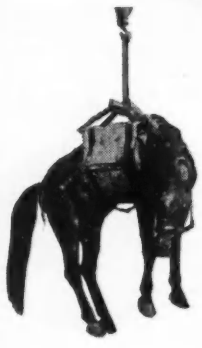
1941	1.49	1945	2.34
1942	1.65	1946	2.20
1943	2.23	1947	2.31
1944	2.31	1948	2.19

END

Please resume your reading on P. 38

Put Your Money on the Thermoid Line

Built for Heavy Duty Service



Thermoid is the best name in fan belts. Thermoid's famous pre-stretching *prevents* stretch, slip, wear and fail, the four steps that, in ordinary fan belts, mean added maintenance costs. Thermoid fan belts always stay the correct size.

Insist on Thermoid Fan Belts because it's good business to buy the best! Matched sets are available for belt drive applications where needed.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

ATTENTION TRUCK OPERATORS

Big Savings on truck tires and tubes.

The famous Vanderbilt BX-44 Truck Tire—rayon construction—no better truck tire at any price. Factory fresh—guaranteed firsts.

CHECK THESE LOW PRICES
MADE POSSIBLE BECAUSE:

- ✓ Direct factory shipment.
- ✓ Elimination of all distribution and handling costs.
- ✓ Our low factory, cost-plus, price passed on to you.

Size	Ply Rating	Tire Price	Tube Price	Size	Ply Rating	Tire Price	Tube Price
6.00-16	6	$11.05	$1.24	7.50-20	10	$30.38	$2.77
6.50-16	6	12.87	1.39	8.25-20	10	36.02	3.03
6.50-20	8	19.14	2.02	8.25-20	12	41.26	3.03
7.00-15	6	14.55	1.41	9.00-20	10	42.20	3.65
7.00-16	6	14.40	1.41	9.00-20	12	47.94	3.65
7.00-20	8	20.62	2.27	10.00-20	12	53.60	3.93
7.00-20	10	26.04	2.27	10.00-22	12	57.42	3.98
7.50-16	8	20.08	1.82	11.00-20	12	57.15	3.93
7.50-20	8	24.50	2.77				

Terms Net F.O.B. Factory, Buffalo, N. Y.
FEDERAL EXCISE TAX ADDITIONAL

FOR FULL DETAILS COMMUNICATE WITH MAIN OFFICE—

VANDERBILT DISTRIBUTORS, Inc.

129 N. E. 79th St. MIAMI, FLA. Ph. Miami 78-7653

TARP-SEAL

. . . The TOUGHEST DOGGONE

canvas cement ever made for patching torn truck covers quickly without removing cover from truck. Permanent, flexible, waterproof. Not affected by heat, cold, snow, or ice. Extensively used by motor carriers.

Pint $2.00
Quart $3.50

SATISFACTION GUARANTEED

Gallon $12.00

Your check or C.O.D. plus postage

TARP-SEAL
3654 Jerome Ave., New York 67, N. Y.

FOR COMMERCIAL BODIES—
(LIGHT TRUCKS)
—CLEAR REAR VISION

It's *big* (5" diameter), with best quality mirror, substantial construction, Ball Joint for rigid holding with easy adjustment. *Very durable.* Several models. Write.

WHITEHEAD STAMPING CO.
EST. 1903 **1685 W. LAFAYETTE BLVD., DETROIT 16, MICHIGAN**

PERFECTION

(The Name To Remember)

BODIES AND HOISTS
ANY CAPACITY ANY SIZE—
for **ALL MAKES OF TRAILERS**

Photos show a PERFECTION No. 254 Dump Body and No. 827 Iso-Draulic Roll-A-Lift mounted on 4-wheel trailer. Length 168", width 84", capacity 6 yd., wheelbase 108".

Write for complete information.

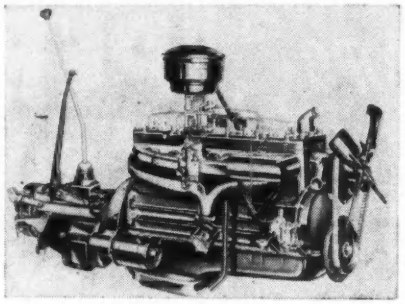
THE PERFECTION STEEL BODY CO.
Galion, Ohio, U.S.A.

PERFECTION
STAKE and DUMP BODIES
HYDRAULIC HOISTS

FOR ANY TRUCK
STANDARD or SPECIAL UNITS
IN ALL SIZES • FOR ANY USE

Ford Adds 110 Hp Six For F-6 Trucks

A NEW, MORE powerful six-cylinder Ford truck engine with four-speed synchro-silent transmission is now available as optional equipment on series F-6 Ford trucks. Designed to provide greater performance and acceleration for heavy hauling and high speed on grades, the new Ford Rouge 254 Truck Six engine develops a maximum of 110 hp and 212 lb ft torque.



It is the largest six cylinder engine produced for Ford trucks.

The new truck engine is equipped with free valves having a special cap design on exhaust valve stems which permits free rotation when opening and closing for self-cleaning, better seating and longer valve life. The high lift camshaft is of heavy cast alloy iron with large inserted type replaceable bearings, gear driven direct from the crankshaft. A precision machined aluminum timing gear assures quiet operation and longer life.

The balanced crankshaft is of heavy steel with integral counterweights and has 2.874 in. diameter replaceable type main bearings. Tubular constructed crankpins provide a high factor of strength with minimum weight.

Long-lived main and connecting rod bearings are of precision thin shell steel-backed copper lead with babbit overlay. Bearings are of large diameter for lower bearing pressure and extra-wide for better oil retention and control.

Ford loadomatic type ignition with full automatic vacuum controlled distributor provides correct spark advance for every engine speed condition.

Cartridge type oil filter, large removable oil sump, oil bath air cleaner and velocity type engine governor are standard equipment. Bore and stroke is 3.5 x 4.4, and the compression ratio, 6.8 to 1.

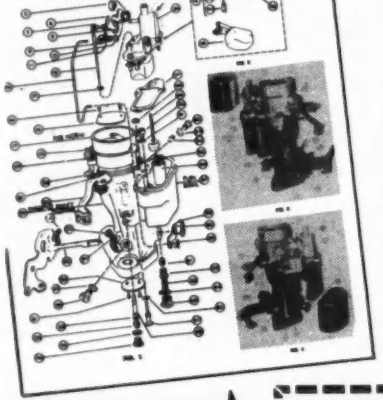
The heavy-duty 11-in. gyro-grip clutch multiplies grip as speed increases. Cushion disc construction reduces tendency to grab. The clutch throwout ball bearing is pre-lubricated and sealed.

Now you can easily rebuild carburetors in your own shop with the new

HYGRADE FINGERTIP SYSTEM

You'll have real insurance against "down-time" because you *know* that every part that wears has been replaced with a *brand new part* from the Hygrade kit. Without leaving the shop – in a matter of hours – every mechanic can learn to dis-assemble and rebuild a carburetor.

All the mumbo-jumbo that mechanics used to associate with carburetor rebuilding is gone. Packed in every kit are clear step-by-step instructions, arranged in sequence of assembly which tie in with large exploded-view drawings and photos. The location of parts on these pictures is so easy that parts practically fall into place by themselves.



THE HYGRADE FINGERTIP KIT

ALL THE PARTS the mechanic needs for rebuilding a carburetor are literally at his fingertips...packed and labeled in separate envelopes for each assembly operation. Work is done step-by-step, envelope by envelope. (As each assembly operation is completed all the parts in that envelope are used up.)

For real insurance against "down-time", write us – giving the make and model of one of the carburetors you use. We will send a sample instruction sheet. Convince yourself by actual test, how easy carburetor rebuilding can be.

SAVE GAS • SAVE ON DOWN-TIME

FREE!
SEND FOR SPECIMEN INSTRUCTION SHEET

HYGRADE PRODUCTS DIVISION
35-39 Thirty-fifth Street
Long Island City 1, N. Y.
Send me a Hygrade Fingertip Instruction Sheet on rebuilding Carburetors for model .....
Make..... Part no.....
Firm name.....
Attention of .....
Address .....
City ..... State .....

Federal Rounds Out Forward Control Line

FOLLOWING the introduction of the initial F-105 heavy duty forward control chassis in September, Federal Motor Truck Co., announces the rounding out of its offering of forward control vehicles to cover six models, including the F-105 and two diesel-powered chasses. Range of GVW ratings for the line now runs from 18,500 to 23,000 lb. Wheelbases are shorter than on standard Federal models, ranging from 122-in. for short wheelbase jobs to 240-in. for long wheelbase bus jobs. In the long wheelbase range which runs from 180 to 240 in., any length within this range to suit his body requirements may be specified.

Hydraulic brakes are standard on all models, with air brakes offered as optional equipment on all models except F-100. Five-speed transmissions—either five-speed forward or overdrive-in-fifth are standard on all models except F-100 and F-102; and optional on F-102. Cast wheels and bus type springs are standard equipment on all models. Another item available as optional equipment is a 12-volt electrical system.

Specifications

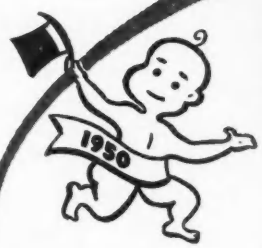
Model	Rating	Engine
F-100	18,500	Her. JXBF
F-102	20,000	Her. JXCF
F-104	20,000	Her. JXDF
DF-104	20,000	Her. DJXHF
F-105	20,000-23,000	Con. T-6427F
DF-105	20,000-23,000	Her. DWXLD

Start the New Year RIGHT!

by equipping every one of your trucks with a new *"easy-does-it"*

HEIN-WERNER HYDRAULIC JACK

Made in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity, as well as Bumper-Lift Jacks for passenger cars and service jacks for shop use. See your Hein-Werner distributor or write us for details.



NOTE THESE PRICES NOW IN EFFECT ON THE FOLLOWING MODELS!

MODEL	CAPACITY	FORMER PRICE (DEALER)	NEW PRICE (DEALER)
E1.7F	1½ Tons	$ 6.95	$ 5.65
E3.9A	3 Tons	12.10	10.65
E5.9A	5 Tons	14.25	12.80
E8.9A	8 Tons	15.55	14.65
E12.9A	12 Tons	22.85	19.25
20.10AA	20 Tons	36.80	32.50
GA (SERVICE JACK)	4 Tons	127.25	119.25

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION*

WAUKESHA • WISCONSIN

**Hein-Werner also manufactures the complete line of Double-Acting G.A.C. Push or Pull Hydraulic Utility Units for body, fender and frame repairing.*

New Products . . .

Continued from Page 54

fast acting tool for cutting holes in instrument panels, fenders or other sheet metal areas developed by **Perry Mfg. Co.**, Minneapolis, Minn.

Lathe centers with 60-deg. tungsten carbide tips now being manufactured by the **South Bend Lathe Works**, South Bend, Ind.

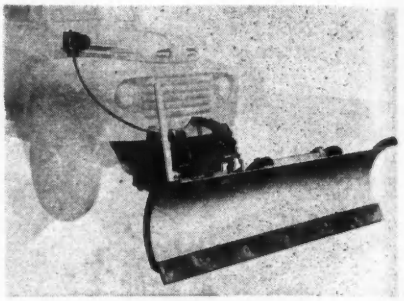
A Coralox spark plug insulator providing easier starting, better idling, longer plug life and improved performance under all operating conditions. **AC Spark Plug Division** of General Motors.

New hydraulic brake fluid, a stable, castor oil base, all-purpose fluid that mixes easily and readily with all other brake fluids, developed by **E. F. Drew & Co., Inc.**, of New York City.

P176. Snowplow Adapter

This conversion kit for adapting snow plows and mowers to a power hydraulic lifting system is easily installed and can replace either hand or other mechanical lifts. It requires no changes in rams or lifting arms.

Hydro-Pac—is driven by an electric starter motor which takes its power



from the battery on the truck or tractor. No belt or power take-offs are required. Lift is controlled by pressing a button on the dash board which raises or lowers the lifts. The Donnell Hydraulic Co., Garden Prairie, Ill.

P177. Valve Refacer

This wet valve refacer, the VR-100, is universal and does a precision grinding job on valve faces, valve ends, tappets, and rocker arms. It will handle all valves including the latest types with stems from ¼ in. to 11/16 in., inclusive, and face diameters up to 4 in.

All valve angles from 0 deg-90 deg can be ground on this machine with "quick-set" stops for 15 deg, 20 deg, 30 deg, 44 deg, 45 deg, and 90 deg angles. Special collets grip the valve stem in two places—above and below worn sections—to assure accuracy to

within .001 in. at a distance of 1 in. from the spindle nose. The valve rotating workhead incorporates a separate AC-DC universal motor and worm and gear drive mechanism. Snap-on-Tools Corp., Kenosha, Wis.

(TURN TO PAGE 144, PLEASE)

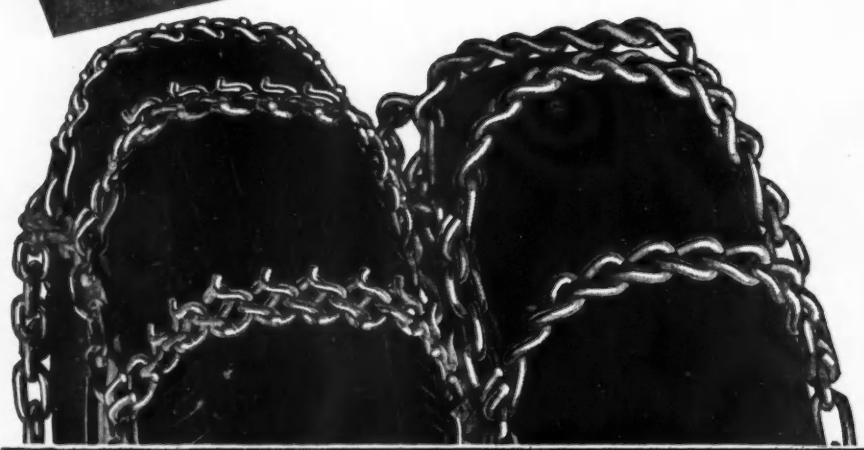
WESCO
TIRE CHAINS

WHEN THE WEATHER IS ROUGH AND THE GOING TOUGH . . .

. . . WESCO CHAIN will help keep your fleet on the road, on the move and on schedule. There is extra traction, extra safety and extra wear built into every pair—the hardness to resist wear, the toughness to withstand shock and strength to hold under a hard pull.

"Custom" fitting, with time-saving easy-on easy-off fasteners, they are quality chains you can rely on. There are no better chains made.

Carried in Stock by your local Wesco Distributor

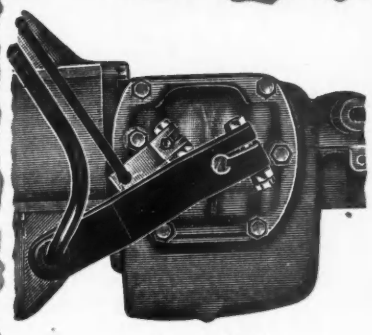


WESTERN CHAIN COMPANY
1801 W. BELMONT AVE. CHICAGO 13, ILLINOIS

Quick-Economical CHANGE-OVER

MECHANICAL GEAR SHIFT ASSEMBLY

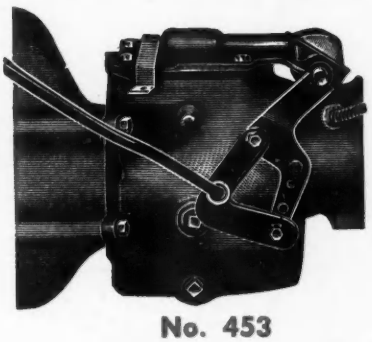
for CHEVROLET CARS 1939 thru 1948



No. 454

MECHANICAL GEAR SHIFT ASSEMBLY FOR 1940 THRU 1948 CHEVROLETS

A simple replacement assembly — it's positive! List $3.00



No. 453

MECHANICAL GEAR SHIFT ASSEMBLY FOR 1939 CHEVROLET Soundly engineered to do the job right. List $3.00

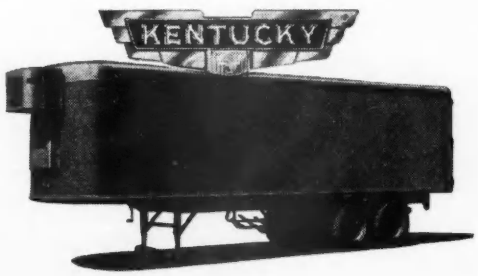
Here is the answer for many car owners, who will welcome a mechanical gear shift that gives positive, easy and desirable gear shifting with economy. Can be installed in 20 minutes.

ORDER FROM YOUR JOBBER

Re-Conditioned CHAMP-ITEMS Inc. SHORT CUTS

CHAMP-ITEMS, INC.

3101 Apple Ave. St. Louis 14, Mo.



HAVE YOU INVESTIGATED

the sudden switch to the complete line of

KENTUCKY TRAILERS?

Now over 50 fully equipped strategically located sales and service stations across the nation READY TO SERVE YOU.

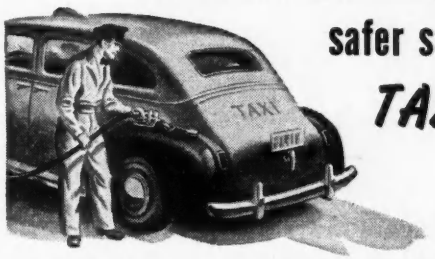
KENTUCKY MANUFACTURING COMPANY

R. C. TWAY COMPANY, *Incorporated*, OWNER

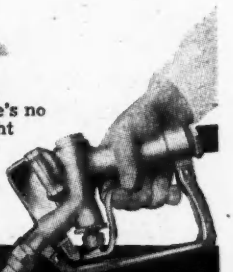
2601 South THIRD Street, Louisville 8, Ky.

Since 1879

"SAFETY-FILLS" for quicker, safer servicing on *TAXI CABS*



WHEN GASOLINE covers the end of the spout, "Safety-Fills" shut off automatically. There's no need for listening and guessing even at night or under noisy conditions. They do the job on all fleets without loss of time and eliminate the hazard and waste of overflow. Mail coupon today for details on how "Safety-Fills" can speed servicing for you.



Buckeye

BUCKEYE automatic shut-off valves for handling most liquids.

"SAFETY-FILL" NOZZLES

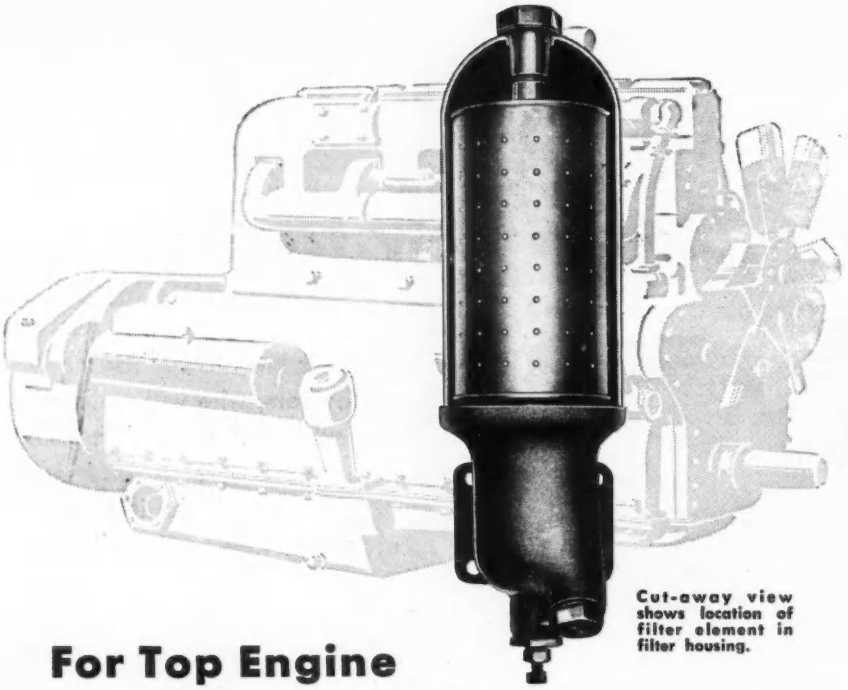
BUCKEYE IRON & BRASS WORKS, Dept. C, Box 883, Dayton 1, Ohio

Please send details on Buckeye No. 820 "Safety-Fill" Nozzle.

NAME ----------

ADDRESS ----------

CITY ---------- ZONE ---------- STATE ----------



Cut-away view shows location of filter element in filter housing.

For Top Engine Performance — Longer Life — and Less "*In-the-Shop*" Expense — Use

MICHIANA FILTERS

Operating costs are reduced through the use of reliable oil filters of adequate capacity. The engine is kept clean and performance improved for many extra hours of service. "In-the-shop time" is reduced to a very minimum.

MICHIANA Oil Filters have been in use for over a quarter century—they protect millions of horsepower of engine capacity today and are highly regarded by experienced engine builders, and by truck and bus operators whose records reveal the many advantages of MICHIANA Filters.

MICHIANA Filters are made for all types and sizes of internal combustion engines,—gasoline and Diesels. Write for Bulletin 839.

MICHIANA PRODUCTS CORPORATION
Michigan City, Indiana

MICHIANA OIL FILTERS

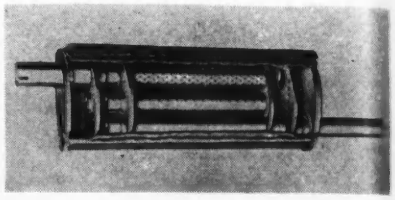
To insure maximum efficiency and protection, always use MICHIANA Replaceable Elements.

New Products

Continued from Page 142

P178. New Muffler

Maremont's new line of mufflers have been built to the size and design cushion shamber that will give quiet performance and minimum pack pressure. Features include special perforations



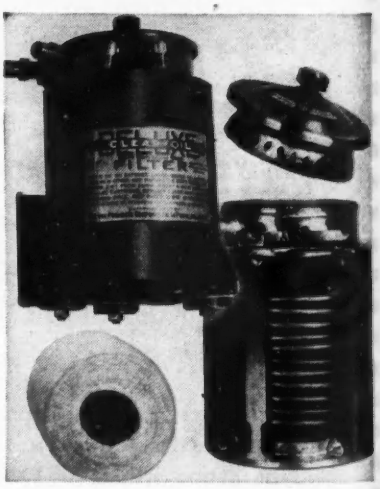
in inner tubes and spot welded construction, said to improve life and efficiency. Maremont Automotive Products, Inc., Chicago, Ill.

P179. Gasoline Pump

Fleetmeter gasoline pumps are built in two models; one with register and another with register and ticket printer. Both models are available in standard or heavy-duty units, with auxiliary hand drive optional. Units feature a new streamlined appearance with an improved hose hook. Service Station Equipment Co., Muskegon, Mich.

P180. Thermal Oil Filter

The Thermal oil filter pre-heats oil to the temperature best suited for filtering in cold weather and cools the lubricant during hot weather operation before filtering. This is accomplished by passing the lubricant through 18 ft of copper tubing con-



tained in a brass casing which forms a water jacket. In this way, the oil before passing into the filter is kept at the temperature of the water. De-Luxe Products Corp., LaPorte, Ind.

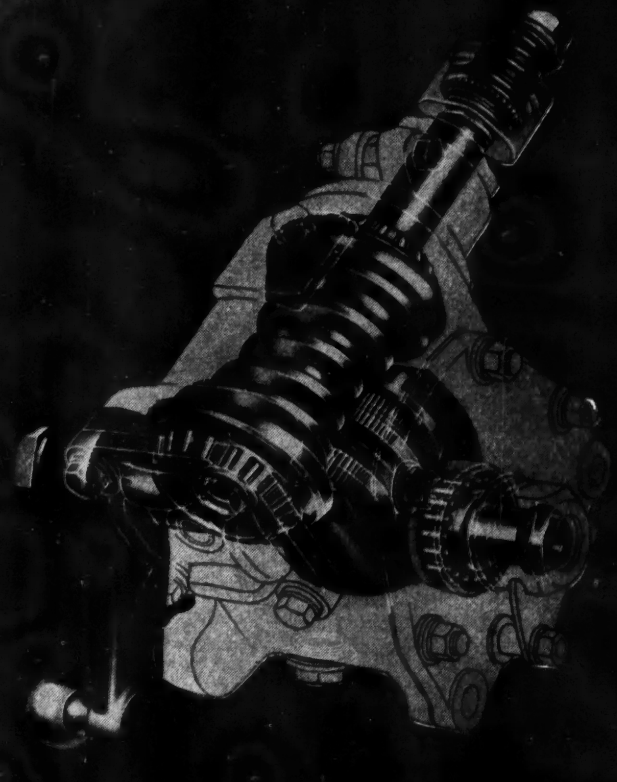
END

Please resume your reading on P. 63

Master Craftsmanship

NOTRE DAME CATHEDRAL

This historic Paris Cathedral is noted throughout the world as an enduring masterpiece of rich French cathedral architecture. It has defied the ravages of time for seven centuries.



Gemmer Steering Gears . . . show master craftsmanship in design and construction. They have stood the test of time—have remained in a position of leadership since the early days of the automobile. Today, more people steer the Gemmer way than any other.

The design which embodies rolling gear teeth in the sector, is the simplest, strongest, most compact approach to easy steering. Liberal use of antifriction bearings reduces friction to a minimum. Their manufacture shows that quality which fulfills the promise of design excellence.

Gemmer Steering is easy, firm, responsive, with absence of rubbery feeling or wander. There is abundant strength, and the heaviest vehicle is easily given plenty of power for parking.

Durable—with reasonable care, a Gemmer Steering Gear will last the life of the vehicle.

GEMMER MANUFACTURING CO.
6400 Mt. Elliott • Detroit 11, Mich.

Gemmer Has Been Making
Steering Gears for Motor Vehicles
for 42 Years

5-W Oil Improves Sub-Zero Operation

Continued from Page 73

stability. The operational data from 123 vehicles tested by the cooperating companies were selected.

Data on the consumption for both 5W and 10W show that large variations are to be expected in both the 5W and 10W results. The magnitude of these variations and the validity of the comparison of the two oils was evaluated by studying the distribution of the reported data. A majority of the 5W results are in the 1000-2000 miles per gallon group. About 85 per cent of the 5W and 70 per cent of the 10W data occur in the range of less than 3000 miles per gallon.

The experience of the marketers of 5W during the past winter is of considerable importance. No general complaint of high oil consumption was encountered, although a few cases where heavy-duty operations were involved are listed. Most of this field experience is in cold climates using high VI oils.

Based on this analysis it is evident that oil consumption when using 5W oil will show only a moderate increase over that with 10W if:

1. An oil of reasonably high VI is used.
2. Engine temperatures are not increased above normal winter operating temperatures by heavy duty operation, high ambient temperatures, or abnormal engine or vehicle condition.

Cold Starting

The definition of the improvement in cold starting is one of the most interesting points in the development of 5W oil, for the entire study was based on the need for this improvement. Cold starting tests were run by four of the cooperating laboratories. The bulk of the data was obtained using the research oils, but the methods of test and the temperatures used varied among four laboratories. In each case a legitimate comparison was possible between the 5W and 10W oils, since the variables between laboratories were constant for any one laboratory.

Viscosity in the engine varies with the oil used, the amount of dilution in the crankcase, and the ambient temperature. Cranking speed varies as a function of viscosity, engine design variables, and the condition of the electrical starting system. Starting time, that is, time to first fire and time to run, varies with cranking speed, engine design variables, ambient temperatures, humidity, and fuel characteristics.

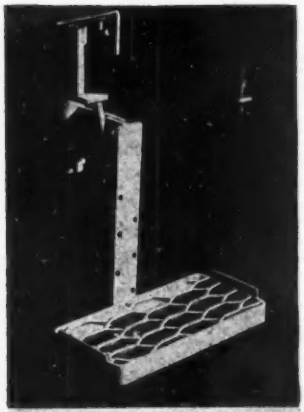
All laboratories showed an improvement in cranking speed when the 5W and 10W oils were compared at a given temperature. The increase varied from a low of 15 per cent to a high of 58 per cent. It is significant to note here that the individual tests from which these averages were compiled showed an increase in cranking speed without exception. The average cranking speed with 10W was 62 rpm and the average cranking speed with 5W was 82 rpm, an increase of 33 1/3 per cent.

Wear

The conclusions to be drawn regarding wear have been considered of primary importance since the beginning of this project. The fear has often been expressed that excessive wear would result from the low viscosity of 5W oil. The reported data show a wide range of test conditions. Tests were conducted at oil temperatures ranging from sub-zero to upwards of 250 deg. F. There was no unanimity of opinion on engine speed, load, or measurements to be taken.

(TURN TO PAGE 148, PLEASE)

Revolutionary NEW

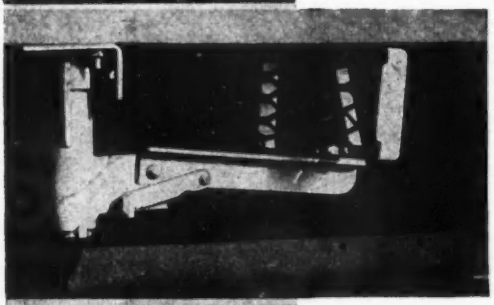


Bustin "SWING-A-WAY"

PATENTS PENDING

SAFETY STEP

In all the years of truck history nothing as clever has ever been devised. A safety step that folds and swings away. It can be used for trucks, tractors, trailers, etc. can be placed on side, drop end and rear.



The step is constructed of 3 lb. mesh affording better traction than any plate tread. It also helps to keep the truck sanitary by using the tread as a shoe scraper. It will operate safely in all kinds of weather. All Bustin "SWING-A-WAY" Safety steps, when mounted on side, will swing out of way of any obstruction no matter whether truck is moving forward or backward.

Bustin "SWING-A-WAY" Steps are made in 3 types A, B, & C. List prices start at . . .

Send for catalog

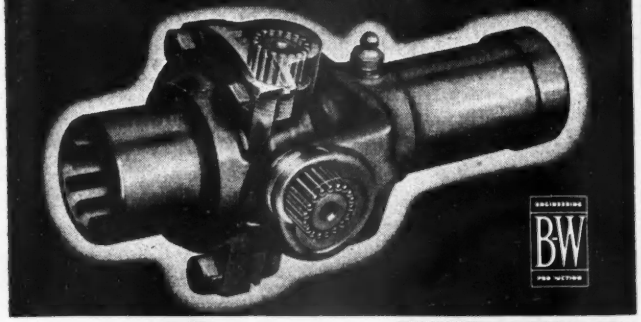
$11.50 F.O.B. New York City

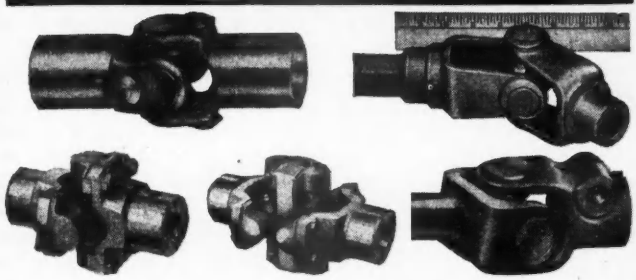
See your dealer or Write to

BUSTIN IRON WORKS Established 1928 Inc. 110 EAST 130th STREET NEW YORK 35, N. Y.

BUILDERS OF BETTER GRILLE GUARDS FOR TRUCKS

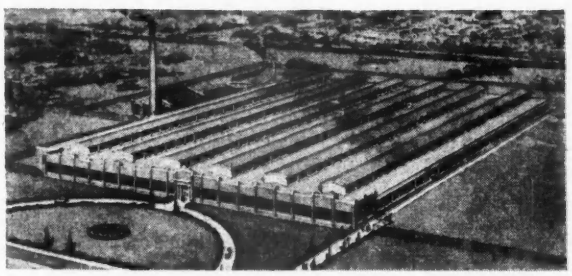
MECHANICS
Roller Bearing
UNIVERSAL JOINTS



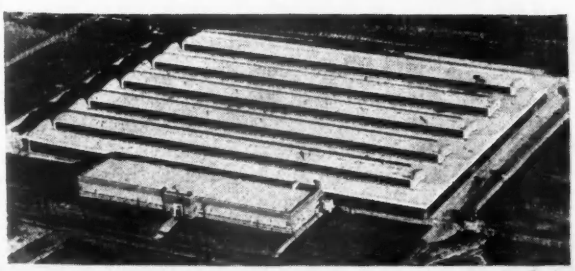


-with 40 Years Experience

Back of every MECHANICS Roller Bearing UNIVERSAL JOINTS application is over 40 years of experience designing, building, applying and servicing universal joints — for millions of cars, trucks, tractors, farm implements, road machines and industrial equipment. A complete engineering service and two huge factories, using the most modern and efficient equipment, are available to help improve the propeller shaft units in your product. Our new catalog — showing the complete line of MECHANICS Roller Bearing UNIVERSAL JOINTS and PROPELLER SHAFTS — will be sent to manufacturers, upon request.



Two modernly equipped plants efficiently producing universal joints and propeller shafts exclusively.



MECHANICS UNIVERSAL JOINT DIVISION
Borg-Warner • 2034 Harrison Ave., Rockford, Ill.

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TO BETTER AUTOMOTIVE CLEANING

1. WHITER SIDE WALLS It sure tickles the owner to see his sidewalls dazzling white. You can do it in seconds with Kelite No. 28 — safely!

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INDUSTRIAL CHEMICALS FOR CLEANING AND PROCESSING
MANUFACTURING PLANTS IN NEW YORK, CHICAGO, LOS ANGELES
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☐ Whiter Side Walls ☐ Safe Parts Cleaning
☐ Magic Steam Cleaning ☐ Cleaning Radiators

NAME_____
COMPANY_____
STREET_____
CITY_____ STATE_____

5-W Oil . . .

Continued from Page 146

The bulk of the data indicate no major differences in wear were encountered. Despite the general agreement that wear under most conditions was not appreciably greater with 5W than with 10W, it is interesting to examine the exceptions. In each case the original report is quoted directly.

Automobile Company B — "It was found that wear on all parts except the piston rings was negligible and practically the same for both 5W and 10W oils."

Automobile Company C—"There is no significant difference in wear between the 5W and 10W oil except for the piston and ring scuffing occurring with the low VI REO-45-48 oil of 5W grade."

Oil Company I — "1. For relatively light duty truck service, there is no appreciable difference in wear between trucks using 5W and 10W crankcase oils. 2. For heavy duty truck service under mild winter conditions, the use of 5W oil caused a noticeable increase in engine wear." From cold starting tests: "The 5W engine showed slightly greater wear on the cylinder bore, valve stems and valve guides than did the 10W engine."

Oil Company L — From fleet road tests: "Although the data are limited and not completely consistent, the preponderance of data obtained indicate higher wear for the 5W than for the 10W oil."

Oil Company H—For field test (without measurement): "Evidences of increased engine wear with the use of 5W motor oil were uncovered. It is of course impossible to be certain that this was solely due to the use of the lighter grade of crankcase lubricant, but the fact that two engines required re-boring on replacement of the block is of interest."

It will be noted that most of the significant differences in wear occurred as a result of heavy-duty operation either in trucks or on the dynamometer. While it is felt that the data on this type of operation is insufficient to reach any conclusion, heavy-duty operation might increase the minor difference in wear encountered under normal load and temperature conditions. It is suggested that operators of heavy duty equipment should be careful in the use of 5W oil.

Conclusions

A moderate increase in oil consumption is to be expected where 10W is replaced by 5W. A variety of road test data contributed show an average increase in consumption in the order of 30 per cent. The data on heavy-duty, high temperature engine operations, are insufficient to predict oil consumption characteristics in this type of service.

Suitable viscosity stability can be obtained in commercial 5W oils. Heavier oils pre-diluted to a viscosity equivalent to that of 5W are unsatisfactory due to viscosity instability.

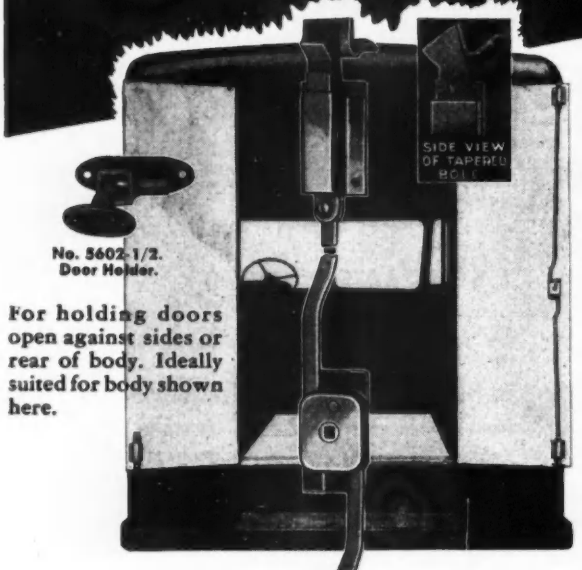
Starting ability at low temperatures is improved with 5W oils as compared to 10W. The average increase reported in cranking speed is 33 per cent in comparable engines under similar conditions. This cranking speed improvement generally corresponds to a temperature advantage of approximately 15 deg. F.

Most of the data show no significant difference in wear between 5W and 10W. There are isolated reports of an appreciable difference under severe conditions Marketers of 5W oil both in Canada and the United States have reported that they have not encountered a wear problem to date. Data on heavy-duty high temperature operation are insufficient to be conclusive.

END

Please resume your reading on P. 74

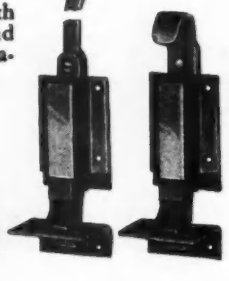
The Ideal SLAM DOOR LOCK
...FOR LIGHT PANEL DOORS



No. 5602-1/2. Door Holder.

For holding doors open against sides or rear of body. Ideally suited for body shown here.

Lock can be furnished with either right or left hand tumbler action. Illustration shows right hand.



No. 565693 'SLAMTITE' Medium Duty

• This time proved door lock rates "ace high" with body builders everywhere for use on light panel doors.

Simply "slam" both doors and they're securely locked.

Tapered bolts on locks and Finger Hook Latch bolt pull the doors up tight and hold them firmly in a "rattleproof" position.

Dependable service is assured for a long period of time.

Write for full particulars.

Investigate THESE NEW "LONG RUN" ITEMS

HINGES • LATCHES • DOOR IRONS • DOOR CONTROLS
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REFRIGERATOR LOCKS • PANEL DOOR LOCKS • VAN BODY
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EBERHARD Long Run
TRUCK BODY FITTINGS

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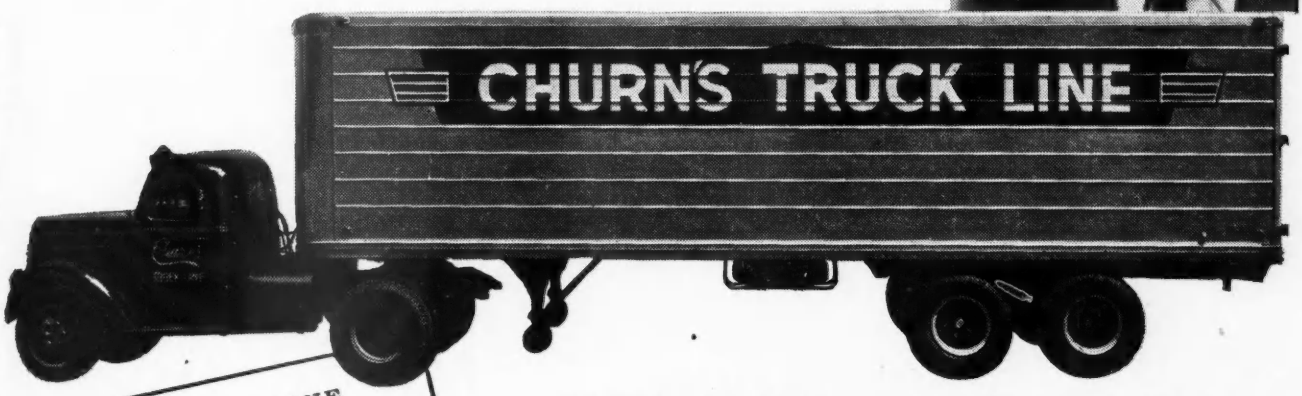
Division of the Eastern Malleable Iron Co. EVARTS AVE. CLEVELAND, OHIO

"Our New Trailmobiles Haul 4100 POUNDS EXTRA PAYLOAD

and Hauling Costs are Lower since we switched to Trailmobile"



CHURN'S TRUCK LINE
INSURED MOTOR TRUCK CARRIERS
PROMPT - DEPENDABLE SERVICE
1615 BROAD CREEK ROAD
NORFOLK, VIRGINIA

October 24, 1949

THE TRAILMOBILE COMPANY
1615 Broad Creek Road
Norfolk, Virginia

Gentlemen:

I'm sure you will be glad to learn about our very satisfactory experience with the 12 new TRAILMOBILE Lightweight Trailers which have now been in service a little over six months.

Not only does each of these TRAILMOBILES carry 4100 pounds more payload per trip than the trailer it replaced but, we are already beginning to see very gratifying reductions in our operating costs.

Our drivers are very enthusiastic, too, because they find TRAILMOBILES so much easier to handle and also easier to keep within the various state weight laws which we deal.

On the whole we are more than satisfied with TRAILMOBILE performance so far and look forward to even greater satisfaction in the future.

Yours very truly,
CHURN'S TRUCK LINE
C. P. Churn

...dary and A Desire To Please"

"Our Payload's Up and Hauling Costs Down . . . AMAZINGLY!"

Writes Pres. C. P. Churn of Churn Truck Lines.

Mr. Churn is just beginning to discover the number of ways that his TRAILMOBILES cut costs and boost profits. He's also going to find that TRAILMOBILES are engineered for longer life, too—more years of service as well as more days of profit-earning service per year, less time out for overhaul—and lower overhaul cost when it finally does become necessary. In addition, as Churn Co. drivers have already discovered, TRAILMOBILE is the "Easiest pull" on the road (first place winners 4 straight years in the National A.T.A. Roadeo). But, learn the "Whys" behind these facts . . . mail the coupon below for full information.

GET ALL THE FACTS . . .

THE TRAILMOBILE COMPANY
Cincinnati 9, Ohio • Berkeley 2, California

MAIL THIS COUPON NOW!

THE TRAILMOBILE CO., 31st and Robertson, Cincinnati 9, Ohio
Please rush me complete descriptive information on the new lightweight TRAILMOBILE.

Name _____
Company _____
Business Address _____
City _____ *State* _____
My Position _____

YOU CAN INSTALL AN
"Aero-Seal"
HOSE CLAMP
WITH ONE HAND
THEY'RE SELF-FEEDING

1. "Aero-Seals" can be installed without removing the hose. Simply spring ends apart and snap around. Spring steel clamp retains circular shape.

2. Worm gear teeth engage perforated strip automatically. A fractional turn of the worm drive starts tightening action.

3. Tightening clamp with screw driver results in uniform clamping and *sealing* pressure around entire circumference. No crimping or bunching of hose to cause leakage.

"AERO-SEAL" Worm Drive Hose Clamps are easy and fast to install — save plenty of time and trouble. No loose parts to drop. Worm Drive is proof against vibration — "AERO-SEALS" *will not loosen.* Write TODAY for free sample.

WORM DRIVE

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INTERCHANGEABILITY PARTS LIST
for
EATON TWO SPEED AXLES
in
Brockway, Diamond T, Dodge, Ford General Motors, and International Harvester trucks.
Easy-to-read cross-reference charts giving names and numbers for all parts of these axles. $5.00 per copy. Small postage charge on C.O.D. orders.
M & H PARTS INC.
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1950 Diamond T's

Continued from Page 80

per nickel matrix. All engines feature larger exhaust manifolds, mechanical governors, improved carburetors. Valve rotators are standard on the JXLD.

Dust-proof distributor with full automatic advance is standard on all engines. Circuit breakers are employed instead of fuses with a separate circuit for headlamps. For city delivery, engines can be fitted with a special Auto-Lite generator of 32-amp capacity with cut-in at 390 rpm engine speed.

With air cleaner completely under the hood, provision has been made for supplying fresh outside air directly to the air cleaner inlet. This is done by means of an air duct built in the hood, extending from one side to the other and carrying air from grilles on each side of the hood. This air is brought into the air cleaner inlet through a

(TURN TO PAGE 152, PLEASE)

KYSOR
Truck Cab Heaters
heat with FRESH AIR and provide temperature control.
Easy to install.
Write for Bulletin R.H.
"BUILT TO LAST"
KYSOR HEATER CO.
Cadillac, Mich.

FRINK
SNO-PLOWS
Both "V" TYPE and ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS FROM 1½ to 10 TONS
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DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.

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FINER DECALCOMANIA
FIRST IN { APPEARANCE ECONOMY DURABILITY
Made With DuPont "DULUX"
Write Today for details
THE PERMALUX COMPANY
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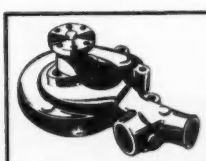
PREFERRED FOR REPLACEMENT
SKF
BEARINGS

BETTER than Ever Before

Repower with
RAMCO
10 up
PISTON RINGS

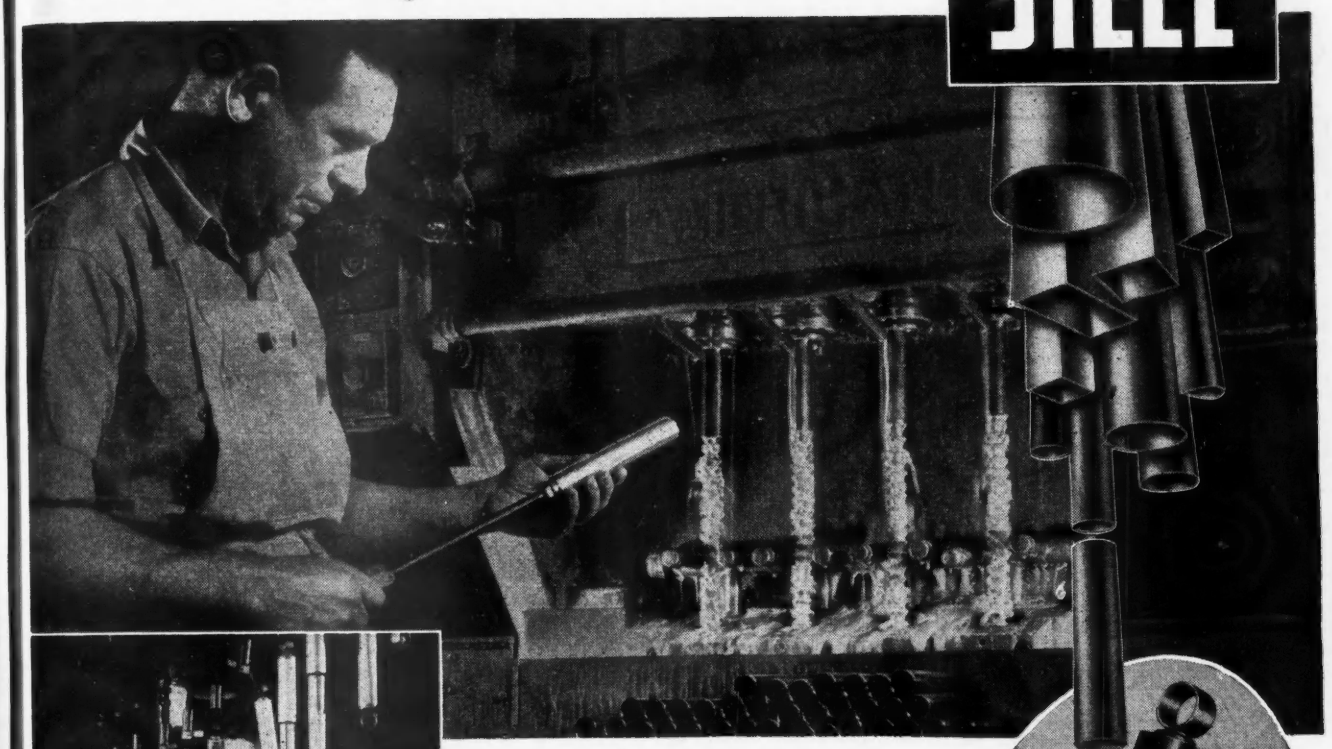
CLEVELAND CHAIN
THE CLEVELAND CHAIN & MFG. CO.
Cleveland 5, Ohio



our growing family of
Thoro-Test WATER PUMPS
now number 65
Wohlert CORPORATION
LANSING 5, MICHIGAN

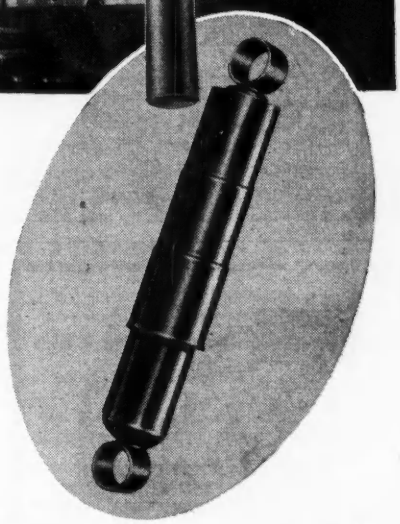
Houdaille-Hershey makes better shock absorbers *at lower cost* with J&L free-machining ELECTRICWELD STEEL TUBING

J&L STEEL



(*Above*) Multiple spindle broaching machine at the Houde Engineering Division of Houdaille-Hershey Corporation that machines the inside diameter of J&L ELECTRICWELD Tubing to 1/1000" tolerance.

(*Left*) Aeroplane-type shock absorbers on the production line at the Houde Engineering Division, Houdaille-Hershey Corporation, Buffalo, N. Y.



When production runs into thousands of units daily, every possible saving in material and labor costs in each shock absorber is vital to efficient manufacturing. Houdaille-Hershey Corporation, Buffalo, New York, reduced manufacturing costs when it changed from more expensive cold-drawn tubing to J&L *free-machining* ELECTRICWELD Tubing for the main cylinder of precision-built hydraulic shock absorbers.

This special J&L tubing is made from *resulphurized, open-hearth steel.* The resulphurizing imparts the desired free-machining quality required by Houdaille-Hershey for broaching the interior surface of the cylinders with uniform precision to a tolerance of 1/1000 of an inch.

Because J&L controls every step in the manufacture of ELECTRICWELD Tubing from raw materials to finished product, it can give you the exact grade of steel you need to help you make a better product, faster, and at a lower cost.

If you use tubing in the manufacture of your product investigate J&L ELECTRICWELD Tubing. Write today for your copy of our new booklet: "J&L ELECTRICWELD TUBING *for more strength with less weight.*"

Jones & Laughlin Steel Corporation
432 Jones & Laughlin Building
Pittsburgh 19, Pa.

Please send me your booklet: "J&L ELECTRICWELD TUBING *for more strength with less weight.*"

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TITLE_____

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From its own raw materials, J&L manufactures a full line of carbon steel products, as well as certain products in OTISCOLOY *and* JALLOY (*hi-tensile steels*).

PRINCIPAL PRODUCTS: HOT ROLLED AND COLD FINISHED BARS AND SHAPES • STRUCTURAL SHAPES • HOT AND COLD ROLLED STRIP AND SHEETS • TUBULAR, WIRE AND TIN MILL PRODUCTS • "PRECISIONBILT" WIRE ROPE • COAL CHEMICALS

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Fit all types of Tire Chains.
Made in 5 sizes
Order them today.

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AUTOMOTIVE CABLE
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1950 Diamond T's

Continued from Page 150

vinyl rubber-grommetted opening in the duct. By removing another inner duct cover, heated under-hood air can be led into the air cleaner in extremely cold weather.

One of the major features of the new chassis is the independent four-point mounting of the entire cab, front sheet metal, and radiator. Bolted to the dash of the cab are heavy channel members which run forward to a structural U-member which carries the radiator core, the latter being insulated from shock and vibration by use of rubber pads and springs.

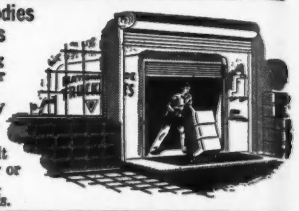
Frames are wider at the front end and are extended to include bumper attachments. Spring hangers are of special fabricated construction and rear hangers are so designed as to be interchangeable right and left.

Standard service brakes include as standard equipment the Bendix 9½-in. Hydrovac booster on all models. In

(TURN TO PAGE 154, PLEASE)

KINNEAR
STEEL ROLLING DOORS

For Truck Bodies and Buildings



Kinnear Rolling Doors save floor and wall space, open completely out of the way, and give extra protection. Built any size; motor or manual control. Write for details.

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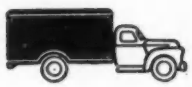
LOCK-EASE®
Graphited
LOCK FLUID

Protects Against
- STICKING
- RUST
- FREEZING

AMERICAN GREASE STICK CO.
Muskegon, Mich.

FOR ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS

Monmouth TRADE MARK *is the name*



FRUEHAUF TRUCK BODIES ARE BETTER— WHY PAY MORE?

SAFE!
Safety 5th Wheels are "honeys" for hard work. They're right, and *really safe* — built by 40 years of railroad coupler experience. Get Folder No. 102.

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CUSTOM-BILT BRAKE LININGS
BLOCKS SETS ROLLS SHEETS
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Complete With
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Discount to Fleet Owners & Wholesale
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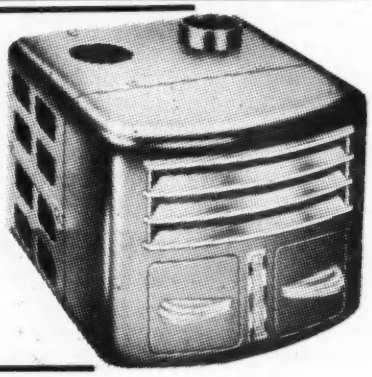

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McCORD GASKETS
MOST CAR AND TRUCK MAKERS DO

McCORD CORPORATION
Detroit, Michigan
Gaskets • Radiators • Mufflers
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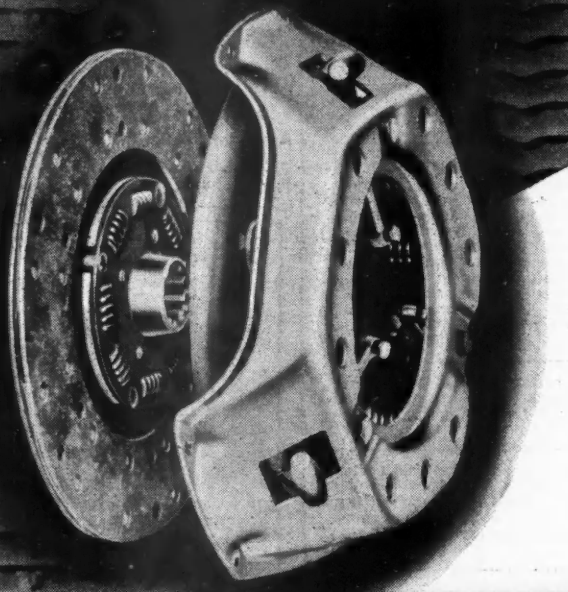
B-W
ENGINEERING
PRODUCTION

ABLE DESIGN
MEANS DEPENDABLE
PERFORMANCE . . .



True test of any design is its ability to *perform,* when translated into production units.

Since 1903, Long radiators . . . and since 1922, Long clutches . . . have equipped millions of passenger cars, trucks, tractors and buses. They have given billions of miles of fine performance . . . proof of able design and careful manufacturing.

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CLUTCHES • RADIATORS • OIL COOLERS

LONG MANUFACTURING DIVISION
BORG-WARNER CORPORATION
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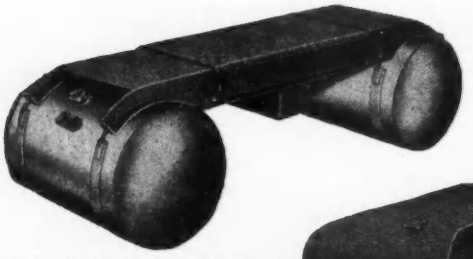
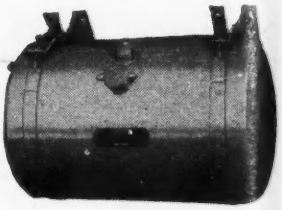


Snyder Safety Cylinder Tank and Tool Box Units use up wasted space by providing storage for tools, chains, power jacks, danger flags, etc. The jackwell is upright to prevent possible escape of jack fluid.

SNYDER SAFETY TANKS

A reflection of confidence in safety, dependability, and proven performance.

Snyder Safety Saddle Tanks occupy wasted space between the cab and fifth wheel. The top deck plate provides a safer means of crossing the chassis and carrying material, hose lines and spare tires. Fuel capacity of 75 to 150 gallons.



Cylinder Tanks are used where space is limited. They are constructed for standard or end fill. Capacity of 28 to 72 gallons.

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Saves up to 50% in hauling costs. Reduces tire wear, spring breakage, overhead.

Little Giant Stabilizer keeps truck from swinging and swaying. Hydraulic Traction Control increases traction on ice, snow, muddy roads, etc. A leader for 24 years. For all 1½ to 5-ton trucks. Also Frame Extension. WRITE.

LITTLE GIANT PRODUCTS, INC.

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BE SURE

the trademark "Timken" is on every tapered roller bearing you buy. Timken bearings are first choice with truck and trailer manufacturers. Remember—for the best in bearings—

IT'S "TIMKEN"

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The Timken Roller Bearing Company
Canton 6, Ohio

OVER 70% OF ALL MAKES OF TRUCKS AND BUSES ARE *Zollner* EQUIPPED

ZOLLNER

HEAVY DUTY PISTONS

1950 Diamond T's

Continued from Page 152

addition, a full Westinghouse air brake system is offered as optional equipment on the 620 and 620H models. This is supplied with a 7¼ cu ft compressor and two 1240 cu ft air tanks. Front brakes for this system are 16¼ x 2¼ x ⅜-in.; rear brakes—16½ x 5½ x ¾-in.

The Warner T98 four-speed synchromesh unit or the Clark 205-VO tire speed transmission is available. Heavier GVW or gross train ratings can be specified only when oversize axles are installed.

Optional engines on 420 models are offered only for tractor service, the JXD being supplied only in combination with the T98 or 205VO transmission and oversize clutch.

END

Please resume your reading on P. 81

Classified Advertisements

TRUCKING COMPANY OPERATING EXECUTIVE. Largest trucking concern of its kind in U. S. desires to employ man capable of handling maintenance, shops, operations, personnel. Must be mechanical engineer or equivalent in experience. Excellent opportunity—salary commensurate with ability. Give full details of education, previous connections, references and salary expected. Box 19, Commercial Car Journal, 5601 Chestnut St., Philadelphia 39, Pa.

For Sale: New Hercules WXLC-3 engines, 404 cubic inch post-war production, $[illegible].00 each, while they last. C. J. Hug Co., Highland, Ill.

For Sale: Fifteen Brand New 1949 Reo Trucks, straight trucks, tractors — all warehoused located Middle West. Selling Distributors Cost. Write Box 16, Commercial Car Journal, 5601 Chestnut St., Phila. 39, Pa.

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MOTOR OIL AND LUBES

100% PURE PENNSYLVANIA

Member, Penna. Grade Crude Oil Association

Better—but *not* more expensive!

SHULER AXLES

SHULER AXLE CO.

LOUISVILLE, KY.

HAVE YOU SEEN THIS NEW K-D IGNITION KIT?

With #120 Kit you can make almost any ignition adjustment on all systems. Pocket size plastic kit, size 4 15/16" x 4 5/8". Ask your jobber.

K-D TOOLS • Lancaster, Pa.

MARK of QUALITY!

Whether they are the Original Equipment Valves on the tubes you sell and service or . . . whether you use them as Replacement Valves in your tire repair business, *the Schrader Trade Mark on any Tire Valve you work with is a Guarantee of Quality!*

A. SCHRADER'S SON • Brooklyn 17, New York

Division of Scovill Manufacturing Company, Incorporated

HEAVY DUTY

MOTOR TRUCKS

•

GASOLINE ELECTRIC

GENERATING SETS

DUPLEX

TRUCK COMPANY

LANSING, MICHIGAN

JANUARY 29, 1947 MILWAUKEE JOURNAL PHOTO

REPEAT PERFORMANCE?

● It won't be by popular request, but *The Big Snow* may be booked for a return engagement in your city this winter. And . . . are you all set for it?

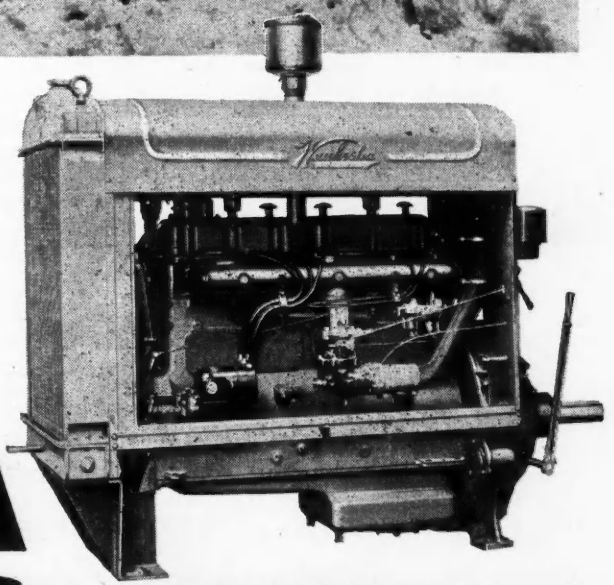
With Waukesha-powered snow plows you *will* be. Then you can put the *open for business* sign on streets and highways, and keep 'em that way.

You'll get action—look at this Model 72 Snow King Rotary Plow. It's mounted on the rear of a truck and independently powered by a Waukesha 145-GKU. The plow's blade pierces and feeds the snow to the Waukesha-powered rotor, which cuts and discharges the snow by centrifugal force straight up, and the deflecting chute throws it to either side, or in opposite directions, off the highway or into waiting trucks.

Find out how Waukesha builds the utmost in power output and dependability into this splendid six. Get Bulletin 1186.

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.
NEW YORK TULSA LOS ANGELES

WAUKESHA ENGINES



WAUKESHA 145-GKU Power Unit— six cylinders, 5¼-in. x 6-in., 779 cu. in. displacement, 167 maximum horsepower.

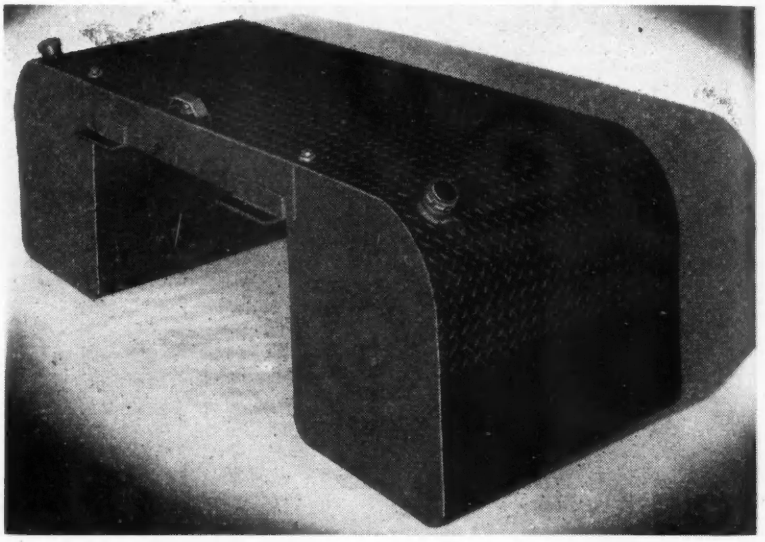
PROTECT YOUR DRIVERS, YOUR TRUCKS AND THE PAY LOAD

by installing

CUTLER *Safety* FUEL TANKS

Cutler Metal Products Co., nationally known producers of all types of fuel tanks, cabs, fenders, hoods, housings, etc., for over forty years, announce a New Line of SAFETY Fuel Tanks—the ultimate in modern SAFETY engineering.

These new Cutler SAFETY Fuel Tanks are the result of a long term research program—



Some of the outstanding features are:

1 Highly crash resistant
Constructed of 12 gauge steel—hot rolled, pickled, and oiled. Designed to fold up or "give" in case of a crash.

2 Spill-Proof
Ball check valve makes tank spill-proof in any position in case of upset.

3 Pressure-Proof
Has non-fillable air space, or void, when tank is full. Acts as a cushion to absorb shock, guarantees that fuel tank will not burst or explode from pressure in case of accident.

4 Non-Explosive in case of fire
The new protection filler-cap provides another safety feature—has no projecting wings to foul tractor air lines when backing up. The fusible plugs prevent explosion in case of extreme heat—in accordance with Underwriters Standard.

5 Long-Wearing
Extra-heavy arc-welded seams mean longer life without repair.

6 Gas Theft-Proof
A screen prevents siphoning.

. . . **and** many other features such as solid brass *chained* filler caps and measuring rods on both sides to save time and annoyance—extra larger drain plug—easy installation.

. . . **and** All tested and approved by UNDERWRITERS' LABORATORIES, INC.

. . . **and** UNCONDITIONALLY GUARANTEED by the manufacturer for one year against leakage and material or workmanship defects.

Play safe—install Cutler SAFETY Fuel Tanks *Write for complete information TODAY*

CUTLER METAL PRODUCTS CO.,
1025 LINE STREET, CAMDEN, N. J.

Stag Beer proves the . . .

*QUALITY & ECONOMY of

MEYERCORD TRUCK DECALS

GRIESEDIECK WESTERN
BREWERY COMPANY
Belleville, Illinois

W. K. Reynolds, Manager
Transportation Division
The Meyercord Co.
Chicago 44, Illinois.

October 25, 1949

*...after five years of service...on trucks in daily use...always outdoors...never kept in garages we are convinced that Meyercord Truck Decals are giving us the finest truck decoration..we have ever had...at the lowest cost

GRIESEDIECK WESTERN BREWERY COMPANY
Frank Griesedieck
Advertising Manager

Convert your trucks to "Ads on Wheels" at a fraction of hand painting cost

The brewers of Stag beer believe that a quality product requires quality truck decorations . . . and they selected Meyercord Truck Decals to do the job. Smart fleet owners make every truck in their fleet an "ad on wheels." Durable, weather-tested Meyercord Truck Decals can be applied on your trucks at a fraction of hand painting time and cost. Trademarks, lettering, product pictorials can be reproduced in any size, colors or designs. They're economical for a dozen trucks or a thousand! *Designing Service . . . free!*

FREE!

Write for colorful brochure, "Ads On Wheels." It's packed with Truck Decal Ideas! Address Dept. 9-12

Founder-Member Lithographic Technical Foundation

The MEYERCORD Co.
World's Largest Decal Manufacturer
5323 W LAKE ST CHICAGO 44 ILL

SHE'LL BE READY TO ROLL

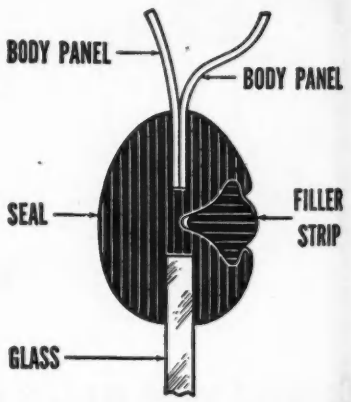
For low-cost, positive weatherproofing, on your vehicles, specify Inland Self-Sealing Weather Strip

Windows and windshields *will* get broken! Then what? How long will your vehicle be out of profitable operation? Not long...if you specified Inland Self-Sealing Weather Strip as original equipment.

The old high-cost method of replacing broken glass demanded two men, preparation, sub-assembly, slow installation, cementing, reworking, and clean-up. But *only one man* does it, the Inland way ... a simple, easy job, in much less time, at much lower cost, with much better results.

Inland means *positive* weatherproofing . . . in *any* weather! It's an all-rubber seal, locking itself with its own pressure . . . *no cement* . . . proof against rain, snow, sleet, ice. Glass *can* break . . . but Inland Weather Strip *can't* leak!

For less time out for maintenance, and more time operating for profit . . . be sure to specify Inland Self-Sealing Weather Strip.



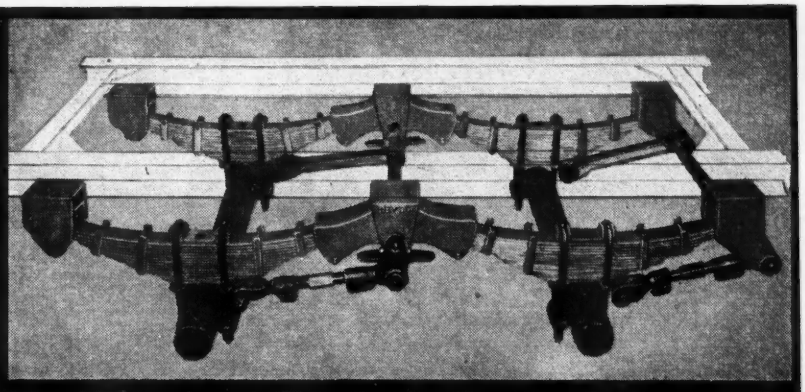
See how easy it is? The seal goes readily onto the body panel or adjacent glass. Then the glass fits into the seal. Then the filler strip is zipped into the locking channel. That window or windshield is weatherproofed *for keeps*. Simple, easy, fast, economical!

INLAND MANUFACTURING DIVISION
GENERAL MOTORS CORPORATION • DAYTON, OHIO

INLAND MANUFACTURING

Self-Sealing Weather Strip
(PATENTED)

THE REYCO TANDEM KEEPS



PERFORMANCE MILES HIGH

MAINTENANCE COSTS LOW

WE QUOTE ONE OF MANY OPERATORS WHO KNOW (NAMES ON REQUEST)

EQUALIZED WEIGHT DISTRIBUTION FOR TRUCKS AND TRAILERS

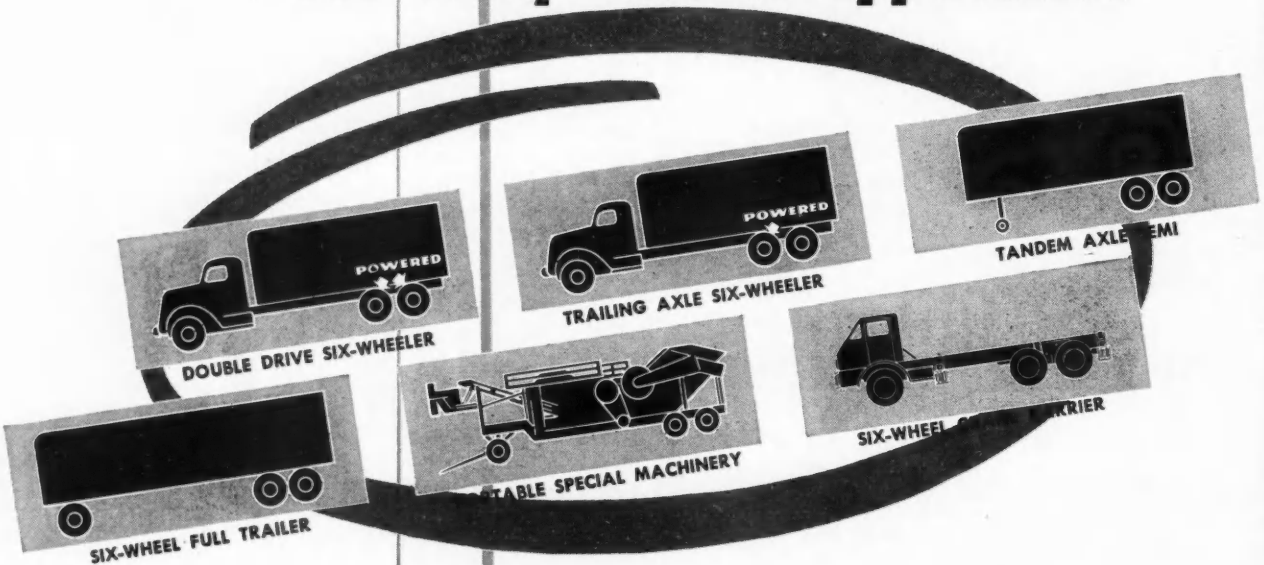
"After three years of use, 250,000 miles, I have spent only $60.00 for maintenance of my REYCO TANDEM."

REYCO

REYNOLDS MANUFACTURING CO.

SPRINGFIELD, MISSOURI

Hendrickson's One Basic Design Is Right For Every Tandem Application



One proved basic design for every application.

Capacity range (26,000 to 60,000 lbs.) is made possible by *size* change *not design* change. . . . There is an exact size to do your job best.

HENDRICKSON TANDEM

"Follow the Leader"

HENDRICKSON MOTOR TRUCK COMPANY • *8004 West 47th Street, Lyons (Chicago Suburb) Illinois*

"Heart Trouble" in Batteries Holds No Terrors, Now!

As in humans, heart-trouble in batteries is a great life-shortener. When the vital, power-producing lead oxides shed from positive plates, plate corrosion and short-circuits result. But battery manufacturers now have a way to handle that problem.

Fiberglas* Retainer Mats keep the oxides in place . . . give you longer, trouble-free service from your batteries.

Follow the lead of so many fleet operators who are pocketing substantial savings by switching to batteries Double-Insulated with Fiberglas Retainer Mats. It will pay you to ask your battery dealer about these stronger-hearted batteries. Owens-Corning Fiberglas Corporation, Dept. 960, Toledo 1, Ohio.

For Longer, Better Service . . . get Batteries *DOUBLE-INSULATED* with

OWENS-CORNING
FIBERGLAS

**Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) for a variety of products made of or with glass fibers.*

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the Standard AXLE ....

UNCONDITIONALLY

GUARANTEED

THROUGH THIS Danger Zone

Guarantee

WE WILL REPLACE NO-CHARGE FREIGHT PREPAID ANY STANDARD FORGE INSERTED SPINDLE TUBULAR AXLE BEAM RETURNED TO US PREPAID WHERE OUR INSPECTION FINDS THIS AXLE BEAM FRACTURED OR BROKEN AT ANY POINT BETWEEN OUTER END OF SPINDLE AND A POINT TWO INCHES FROM OUTER EDGE OF THE SPRING SEAT.

★ ★ ★

THIS GUARANTEE, MADE IRRESPECTIVE OF LOAD, SPEED OF OPERATION AND WITHOUT TIME LIMIT, IS BASED ON YEARS OF USAGE OF THE INSERTED TYPE SPINDLE SHOWN BELOW.

THIS CONSTRUCTION USED IN AXLES INTERCHANGING WITH AXLES OF OTHER TYPES OF SPINDLE CONSTRUCTION RESULTS IN STRENGTH FAR EXCEEDING STRENGTH AND CAPACITIES OF TIRES, BEARINGS AND BALANCE OF TRAILER UNIT. THUS, NO FAILURES OCCUR EXCEPT IN CASE OF DEFECTIVE MATERIALS.

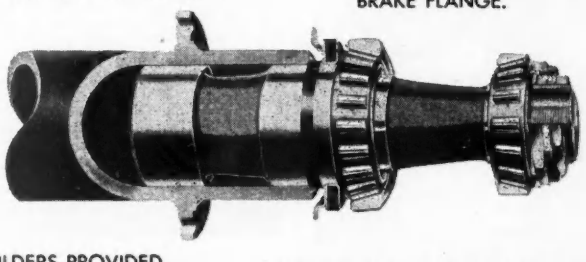
NO SUCH UNRESTRICTED GUARANTEE MADE ON THE BALANCE OF AXLE BETWEEN TWO LIMITING POINTS ABOVE DUE TO ABSENCE OF CONTROL OF MOUNTING CONSTRUCTION, CENTER OF SPRING SEATS AND WELDING OF ATTACHING PARTS WHICH VARY ACCORDING TO INDIVIDUAL SKILL AND DESIGN.

SOLID SPINDLES FORGED FROM ALLOY STEEL AND HEAT TREATED FOR GREATER STRENGTH.

HIGH CARBON SEAMLESS TUBING HEAT TREATED FOR ADDED STRENGTH — PREVENTS LOSS OF CAMBER.

SPINDLES PRESSED INTO MAIN TUBE BY TREMENDOUS HYDRAULIC PRESSURE — AXLE STRENGTH NOT DEPENDENT UPON A WELD.

INSERTED SPINDLE REINFORCES AXLE AT BRAKE FLANGE.



ADEQUATE BEARING SHOULDERS PROVIDED ON SOLID SPINDLE WITHOUT REDUCING STRENGTH AT A CRITICAL POINT.

SPINDLES GROUND TO CLOSER TOLERANCE THAN BEARINGS.

REQUEST YOUR TRAILER MANUFACTURER TO FURNISH STANDARD INSERTED SPINDLE AXLES ON YOUR NEW TRAILERS. AVAILABLE AT TRAILER MANUFACTURERS AND DISTRIBUTORS FOR REPLACEMENT AND CHANGE-OVER JOBS.

★ Standard TRAILER AXLES

Standard Forge & Axle Company Inc.

MONTGOMERY . ALABAMA

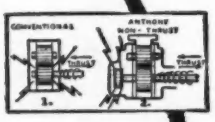
BRAKES FORGINGS TRAILER PARTS

ANTHONY HYDRAULIC

what makes some dump trucks last longer?

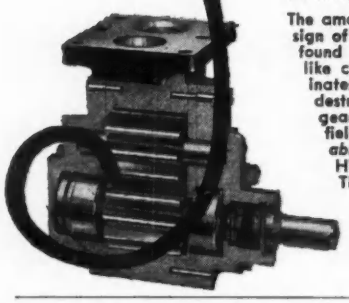
Roller Bearing PUMP with the NON-THRUST feature

ADDS UP TO 700% TO THE LIFE OF ANTHONY DUMP TRUCKS



THE HEART of a dump truck—the pump—plays as important a part in the operation of a dump truck as your heart does to you. And when the pump fails, the hoist fails and the truck stops working. That is why Anthony engineers place such emphasis on the pump.

The amazing patented "NON-THRUST" design of the Anthony roller-bearing pump is found in no other hoist at any price. Unlike conventional pumps, its design eliminates the No. 1 cause of pump failure—destructive mechanical thrust on the gears. This pump has an unequalled field performance record. For *dependable service* DEPEND ON ANTHONY HYDRAULIC HOISTS with the "NON-THRUST" Pump.



ANTHONY COMPANY
STREATOR, ILL.

Get a better run for your money . . .

Get Coopers

. . . truck-bus tires best known for quality

COOPER TIRE & RUBBER COMPANY
Factories at Findlay, Ohio

SPRINGFIELD

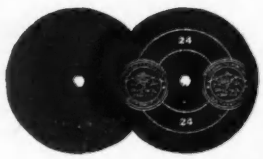
SUPERSEAL Top Quality SUPER POINT

TUNGSTEN CONTACTS AND CONDENSERS

Springfield Electrical Specialties Inc., 120 Wooster St., New York 12, N. Y.

SIOUX "Resin-Bond" Phenol Abrasive Discs

not only cut FASTER and with less effort — but they stay "as COOL as a cucumber" even after long punishing service. They're flexible, tough, long-lasting, non-loading — due to the Resin Bond - Tempered Aluminum Oxide grain and moisture proof fibre back.

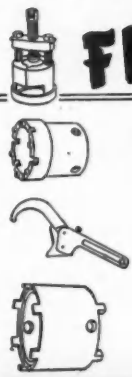


Authorized SIOUX Distributors Have Them

ALBERTSON & CO., Inc.
Sioux City, Iowa, U.S.A.

STANDARD THE WORLD OVER

FLEET OWNERS



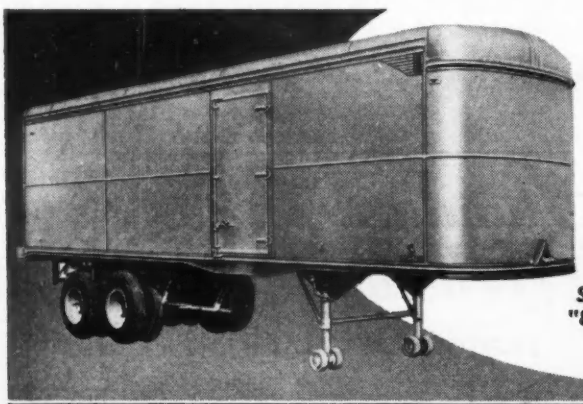
DON'T WASTE TIME

Reduce maintenance costs today with special repair service tools designed for WHITE MOTOR trucks and buses.

These tools simplify the difficult job and make the simple job a breeze.

Write Today for the NEW W.S.S.T. Catalog

Jergens TOOL SPECIALTY CO.
712 E. 163rd St. • CLEVELAND 10, OHIO • KENMORE 2015



TWICE AS MANY DORSEYS

Twice as many Dorsey Vans were delivered in October as in any previous month of our long trailer-building history. Reason? More and more operators are discovering that Dorsey is the outstanding money-maker trailer.

Send for your free copy of "8 Shots at your Target"

DORSEY

DORSEY TRAILERS, INC. • ELBA, ALABAMA

Buy Willard For

DEPENDABILITY · PERFORMANCE LONG LIFE!

TRG and TWG for Heavy Trucks and Tractors

BRG and BWG for Buses and Motor Coaches

THERE'S A Willard FOR EVERY BATTERY JOB

TRG AND TWG TYPES. For 6-volt starting, lighting and ignition on heavy Diesel or gasoline powered trucks and tractors. Sturdy, hard rubber containers. Exclusive Willard "Safety-Fill" construction to prevent over-filling. TWG types with selected wood separators and glass fibre retaining mats for normal service. TRG types with Willard Rubber Insulation and glass fibre retaining mats for cycling service and for vehicles in severe, high mileage service.

BRG AND BWG TYPES. For 12-volt starting, lighting and ignition on Diesel and gasoline powered motor coaches and buses. Strong, hard rubber containers. Exclusive Willard "Safety-Fill" construction to prevent overfilling. BWG types with selected wood separators and glass fibre retaining mats for normal service. BRG types with Willard Rubber Insulation and glass fibre retaining mats for cycling service and for vehicles in severe, high mileage service.

CWG TYPES. For 6-volt starting, lighting and ignition on light to medium weight trucks and for passenger cars in commercial service. Dual insulated with selected wood separators and glass fibre retaining mats. Sturdy, hard rubber containers. Exclusive Willard "Safety-Fill" construction to prevent overfilling.

CWG for Light Trucks

WILLARD STORAGE BATTERY COMPANY

Cleveland • Los Angeles • Dallas • Memphis • Portland • Toronto

PROOF - *not Guesswork*

Makes FWD America's Foremost Heavy-Duty Truck

Here's actual operating proof in typical road construction service. This FWD Maintainer is backing into a steep ditch with a load of fill. What's more, it's doing the job, under complete control. Yes — FWDs give you the combined assurance of four-wheel-drive control and smooth, positive braking action. You can be sure of this even before you buy, because FWD Maintainers are scientifically tested at FWD's proving ground to come to a full stop on a 60% dirt grade. *No wonder FWD Trucks are the number one choice of states, counties and municipalities — with individual fleets of over 300 units!*

WHAT FWDs DO ON THE PROVING GROUND
1 Highball over hilly curved roads!
2 Slog thru mud — up to the bumper!
3 Speed over 100-ft. unbanked circle!
4 Twist over ditches — 18 inches deep!
5 Drive up 6% grade thru 3-ft. of sand!
6 Climb 70% grade from dead stop!
7 Climb 8-in. beam from standstill!
8 Drill pole holes to prove equipment!
9 Speed safely over level highways!

This is FWD's proving ground. This is your assurance that the FWD you select has the stamina to insure long life without expensive mechanical breakdowns.

An FWD "parks" on a 60% dirt grade at the proving ground. For all the facts about FWD Trucks, see your FWD distributor — or write direct.

An Invitation To Truck Buyers

We invite you to watch FWDs pass a series of rigid performance tests. Ask your FWD distributor to arrange your visit to our plant. Or — if you can't get away, ask him to show you the movie, *The FWD Story*. In either case, you will see for yourself how FWD trucks can help solve your heavy-duty trucking problems.

Matt A. Olsen
President
The Four Wheel Drive Auto Company

H-3

THE FOUR WHEEL DRIVE AUTO COMPANY
Clintonville, Wis. • *Canadian Factory:* Kitchener, Ontario
FOUR AND SIX WHEEL DRIVE TRUCKS

America's Foremost Heavy-Duty Truck